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THE
Florist and Pomologist:

A PICTORIAL MONTHLY MAGAZINE

OF

FLOWERS, FRUITS, AND GENERAL HORTICULTURE.

CONDUCTED BY

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1875.

LONDON:

PUBLISHED AT THE "JOURNAL OF HORTICULTURE" OFFICE,
171 FLEET STREET.

MDCCLXXV.

Gray Herbarium
Harvard University
26 Oct. 1912

LIST OF COLOURED FIGURES.

APPLE, FRENCH PARADISE ...	...	...	...	...	Facing page	97
" LADY HENNIKER ...	...	...	...	...	...	61
" LANE'S PRINCE ALBERT ...	...	...	...	...	...	233
BEGONIA EMPEROR ...	...	...	...	...	...	265
" MODEL ...	...	...	...	...	...	109
CAMPANULA SMITHII ...	...	...	...	...	...	209
CHERRY, EARLY LYONS ...	...	...	...	...	...	193
" OHIO BEAUTY ...	...	...	...	...	...	193
CYDONIA MAULEI ...	...	...	...	...	...	49
EACHEVERIA PEACOCKII ...	...	...	...	...	...	121
GENISTA VIRGATA ...	...	...	...	...	...	169
LILIUM CANADENSE RUBRO-FLAVUM ...	...	...	...	...	...	157
" CANADENSE RUBRUM ...	...	...	...	...	...	157
" HUMBOLDTII ...	...	...	...	...	...	217
" PARDALINUM ...	...	...	...	...	...	217
" PARDALINUM CALIFORNICUM ...	...	...	...	...	...	217
NECTARINE, WELBECK SEEDLING ...	...	...	...	...	...	13
PEACH, CONDOR ...	...	...	...	...	...	133
" DR. HOGG ...	...	...	...	...	...	185
PEAR, LOUISE BONNE D'AVRANCHES PANACHÉE ...	...	...	...	...	...	281
" LUCY GRIEVE ...	...	...	...	...	...	85
" SOUVENIR DU CONGRÈS ...	...	...	...	...	...	37
PELARGONIUM (SHOW) CONSTANCE ...	...	...	...	...	...	25
" " CROWN PRINCE ...	...	...	...	...	...	25
PENTSTEMON HUMILIS ...	...	...	...	...	...	241
PLUM, PRINCE OF WALES ...	...	...	...	...	...	253
" SULTAN ...	...	...	...	...	...	145
POMMIER DE PARADIS ...	...	...	...	...	...	97
PYRUS MAULEI ...	...	...	...	...	...	49
ROSE (H.P.) ST. GEORGE ...	...	...	...	...	...	1
" (TEA) CATHERINE MERMET ...	...	...	...	...	...	73

LIST OF WOODCUTS.

<i>Acalypha Wilkesiana</i> (tricolor) marginata	283	Melon, Suttons' New Pear-shaped	... 44
<i>Adiantum speciosum</i>	272	<i>Nepenthes intermedia</i>	257
<i>Althæa frutex</i>	21	Pea, Supplanter	45
<i>Artocarpus Cannoni</i>	211	Pear, Groom's Princess Royal, <i>alias</i> Matthews' Eliza	77
<i>Blumenbachia coronata</i>	136	<i>Pelargonium Rienzi</i>	117
<i>Celosia cristata</i>	99	<i>Peronospora infestans</i> : mycelium, and perfect plant	172
<i>Chamærops excelsa fœmina</i>	124	<i>Peronospora infestans</i> : oogonia and antheridia	174
<i>Chamærops excelsa mascula</i>	124	<i>Peronospora infestans</i> : the resting-spore	175
<i>Chamærops Griffithii</i>	103	<i>Quercus acuta albo-nervis</i>	90
<i>Codiaeum</i> (<i>Croton</i>) <i>ovalifolium</i>	8	<i>Quercus angustifolia</i>	91
Cucumber-root, diseased	29	<i>Quercus bambusifolia</i>	201
<i>Cypripedium japonicum</i>	221	<i>Quercus Burgerii</i>	201
<i>Dieffenbachia brasiliensis</i>	273	<i>Quercus cuspidata angustifolia</i>	91
<i>Dracæna Baptistii</i>	52	<i>Quercus cuspidata latifolia</i>	91
<i>Dracæna Hendersoni</i>	53	<i>Quercus gilva</i>	90
<i>Fuchsia Mrs. H. Cannell</i>	129	<i>Quercus glauca</i>	90
<i>Fuchsia Swanley Gem</i>	129	<i>Quercus salicifolia</i>	200
Fungus of the Potato-disease 172, 174, 175		<i>Quercus sclerophylla</i>	201
Grape, Raisin de Calibre, from Eskdale	245	<i>Quercus setifera</i>	200
Grape, White Nice, from Arkleton ...	245	Sweet William, auricula-eyed	41
Grapes, Small Cluster of, after Thinning	149	<i>Tillandsia musaica</i>	16
Grapes, Small Cluster of, before Thinning	148	Vine, stopping young shoot of	112
<i>Helianthus globosus fistulosus</i>	69	Vine, stopping lateral shoot of	113
Hellebore, Hybrid	161	<i>Vriesia musaica</i>	16
<i>Hibiscus syriacus</i>	21		
<i>Lilium canadense</i>	157		



J.L. Macfarlane, del.

Chromo, G. Cevereyns Brussels.

Rose Saint George.

THE FLORIST AND POMOLOGIST.

H.P. ROSE ST. GEORGE.

WITH AN ILLUSTRATION.

THERE is room yet for a good dark Rose of the globular form, so many of the varieties of this colour, Baron de Bonstetten, Dr. Jamin, Jean Cherpin, Alfred de Rougemont, and Monsieur Boncenne, to wit, being of the flat or expanded form. We have here in the subject of our plate a veritable dark globular Rose, of robust habit and splendid foliage, of hardy constitution and flowering freely. It is the offspring of Black Prince, a Rose not yet so widely known or so generally cultivated as it deserves to be, and approaches more nearly to that variety than to any other with which we are acquainted. It was introduced by Mr. William Paul, of the Royal Nurseries, Waltham Cross, in whose hands, we believe, the greater part of the stock still remains, and will be found to be a worthy addition to the long list of varieties which have been derived from this source. Of the beauty of the Rose itself our figure bears ample evidence.—W. P.

CHERRY-FORCING.

THIS department of fruit-culture is often looked upon as being surrounded by difficulties. I admit that during the early part of the year considerable skill and attention are required, but the danger of failure is reduced to a minimum by a proper preparation of the plants, and a knowledge of their habits. How often do we meet with persons who seem ignorant of these essentials, and who make use of places from which the influences of light and solar heat are all but excluded, and who nevertheless feel surprised that the attempt should have proved abortive!

For the successful growth of this class of fruit, it is imperative that a house should be devoted to it. For want of a proper Cherry-house I have made use of a late vinery, the Vines being for the time removed to the open air; and although there are defects in construction, we have managed year by year to produce excellent crops. Still, properly constructed, a house should specially be set apart for them, since in numerous ways it would be more advantageous than a mere make-shift. Instances frequently occur where the trees are planted out permanently, a plan which, so far as I am aware, does not possess a single recommendation; for not only are the trees more difficult to manage, but less productive than when grown in pots, and there is besides the risk of occasional blanks by death, which leaves unprofitable vacancies for several years. Not so with pot-culture, as we can always have a few extra plants on hand. For the most part, I have been in the habit of preparing my own trees, simply because I have had

the opportunity and privilege to do so, but when the demand for fruit is urgent, application should be made to those who make such things a speciality.

There are different varieties of the Cherry suitable for forcing, but among them all I prefer the *May Duke* and *Black Tartarian*. Whether we purchase established or maiden trees, the stock is a most important matter, for unless it is vigorous and free from disease, the duration of life in the tree will be short and struggling. The best are raised from the seeds or stones of our wild varieties, as they possess an inherent vigour beyond that of our cultivated kinds. The *Cerasus Mahaleb*, or what is called the perfumed Cherry, has been strongly recommended as a stock, owing to its dwarfing property, but this is a quality quite unnecessary in the case of pot-culture, where the roots are constantly confined. Soil exercises a greater influence over plants, either for good or evil, than we are at all times willing to admit. So far as the mere production of wood is concerned, the Cherry-tree is by no means fastidious; but as a fruit-bearing tree, the soil should possess a considerable amount of lime, to assist in the formation of the Cherry-stone. It is by no means uncommon to observe, in the course of a week or so after the shedding of the flowers, a large portion of the newly-formed fruit shrivel and drop. Some, indeed, may adhere till the stoning period, when they, too, fall off, leaving not more than a third or fourth part of a crop. There may be other operating causes, but I feel persuaded that a deficiency of calcareous matter is the major evil; and further, with a calcareous soil there is less production of gum.

Whatever the system of forcing, and however exactly the *modus operandi* may be carried out, failure is certain, unless the fruit-buds are fully matured. I have in some instances seen the trees turned out-of-doors, fully exposed to whatever weather may occur, crippling, if not destroying, the foliage before it has performed its allotted work. We cannot much depend on a crop from wood of the preceding year, although it may be thickly set with fruit-buds, unless it be at the bottom of the shoot. Natural spurs two years old set fruit more freely, and usually of a larger size. Little or no pruning will be required beyond removing worn-out spurs, and providing for a new supply, which is readily obtained by judiciously pinching and thinning the young growths.

In cases where fruit is required early, fire-heat may be applied towards the beginning or middle of February, but let the progress of forcing be slow, and under no condition allow any undue excitement, or the flowers will be produced without substance, and the fructifying organs will be deformed, and incapable of performing their office. At this stage it is rather uncertain what to advise as to the proper temperature, as it may happen that the warmth of the external air is as high as that degree I should recommend to start with. All that can be said on this point is, to keep the heat of the house slightly in advance. As a general rule, a temperature of 42° will be found sufficient, and in the course of two weeks it may be advanced to 45°, allowing an advance of 10° by sun-heat, but confined to that limit by ventilation till the fruit is fully set. Even before, but

more particularly when the blossoms begin to expand, we sedulously prevent the admission of cold wind by placing very thin canvas over the ventilators. Should there happen to be a continuation of bright sunshine, shade the roof of the house with the same material for a few hours daily, which will prevent the flowers from dropping prematurely.

I have, when required, used the same precaution with our Cherries on the open walls, as strong sunshine very frequently proves fatal to the crop. I have the blossoms fertilised daily with a camel-hair brush, which removes any doubt about a failure, as there are few, if any, bees to rove about through the different recesses of the flower. In the course of a little time, if fecundation has taken place, the organs begin to wither or decay, first the stamens, and then the petals. When the setting period has passed, the maximum heat should be advanced to 52° , and the minimum to 48° , and it may so remain till the crop has stoned—always an anxious and a somewhat dangerous time.

The tissue now ceases to increase, and takes a pale yellow colour, owing to the growth of the stone, and should there have been previous mismanagement, the fruit will keep dropping off till three-parts have fallen. There is now little danger of damage from an increase of heat. The night-temperature may range from 56° to 60° , and that of the day to 70° by sun-heat. The use of the syringe should be resumed, since that promotes greatly the growth of the fruit and the health of the foliage. Tepid weak manure-water will be very advantageous, particularly where the crop is heavy, and the pots full of roots.

Should the black or green aphid make their appearance, the house should at once be fumigated, or they will soon make sad havoc among the foliage. Pooley's tobacco-powder is an excellent remedy, applied by his puff-distributor when the trees are moist. There is the Cherry-caterpillar, too, which is very troublesome at times, and which can only be destroyed by hand-picking, as it rolls itself securely in the leaves.—ALEXANDER CRAMB, *Tortworth*.

PLEROMA MACRANTHUM AND ITS ALLIES.

IN the leading garden journal there appeared, some two years ago, a notice or two of the above-named plant [under the name it has usually borne in gardens, *Lasiandra macrantha*, but which, according to M. Triana, should give place to that of *Pleroma semidecandrum*]. I then ordered one, and got what we had already plenty of, namely, *Pleroma Benthamianum* [which is quite a different thing]. Considering that there must have been some mistake, I ordered a plant from another quarter, and this was dwarf, and altogether a different plant. The name will doubtless, in due time, become fixed to the true plant. Of late the Chrysanthemum has been gaining ground, and very deservedly so, for charming the autumn with exhibition and decorative displays; but it seems to me that, with our extended knowledge and rich collections, we by no means make a good use of them. Many finely-coloured plants bloom naturally in the autumn that would enrich the display of the Chrysanthemum by affording

well-marked contrasts. And not the least among these is the *Lasiandra*, or *Pleroma Benthamianum*, which will grow as much as 8 ft. high in two or three seasons by planting it out and lifting, as many persons grow their Chrysanthemums. If kept a little close after being lifted, they soon recover, and the rich colour brings out the rather dull hues of many of the Chrysanthemums. There must be many good things for this purpose in this family alone. The dwarf kind referred to above, that is, the true *P. macranthum*, is more delicate, but still easy to grow, and I know of no colour to match it; even *Pleroma elegans* is not to be compared to it in the soft richness of its colouring, in which respect, indeed, it is altogether unrivalled.—J. FLEMING, *Cliveden*.

VINE SPORT.

A RATHER singular circumstance has occurred in one of the Vineries here this season, which I am quite unable to account for. Some twenty years since a house was planted with *West's Black St. Peter's* Vines, and some ten years since *Lady Downe's Seedling* and *Black Alicante* were inarched on to them. On one Vine three sorts were grafted, viz., *Black Alicante*, *Trebbiano*, and *Golden Champion*. All three rods bore their respective kinds of fruit correctly enough; but the latter sort, not being well adapted for hanging, and all the others in the house being late sorts, the rod of *Golden Champion* was cut clean out last January or early in February, when the Vines were pruned. In fact, it was cut off some inches below the place where the union of the stock and scion had taken place. Strange to say, however, the *Trebbiano* rod has this season produced on one spur, and that about the middle of the rod, or five or six feet from where it is grafted on the *West's St. Peter's* stock, a bunch of grapes of the true *Golden Hamburg*, all the other spurs upon the rod bearing the *Trebbiano*. Those who have seen it have been very much interested in the matter. Can any one explain this freak of nature?—P. GRIEVE, *Culford, Bury St. Edmund's*.

THE CULTURE OF THE TOMATO.

AS the growing and liking for this wholesome fruit or vegetable is evidently increasing amongst all classes, perhaps a few observations on its culture and the best kinds for general growth, may be of some interest to the readers of the FLORIST. Having the advantages of a glass-covered wall, I have this year had a collection of all the kinds of Tomatos I could procure grown in it. I have likewise grown all the same sorts in the open air on the bottom of south walls, as well as some in pots, in heat, for early ripening. The following is a list of the varieties:—

New Trophy.	General Grant.	New Early Dwarf Red.
Hathaway's Excelsior.	Earley's Defiance.	Powell's Early Red.
Large Red Italian.	Orangefield.	Keye's Early Prolific.

The New Trophy is an exceedingly large-fruited sort, some of them here measuring 15 in. in circumference; but it is a late kind, and will only succeed

out-of-doors in very warm summers. Hathaway's Excelsior has a beautiful round fruit, full of juice, and is likewise very prolific with me on the open walls, as well as in-doors. The Large Red Italian is an excellent tall variety, and does well on the open walls. General Grant has a round fruit, smaller than that of Excelsior; it grows in large clusters, and is very juicy, and excellent for making sauce with. Earley's Defiance and Orangefield are excellent dwarf kinds for pot-culture; they are likewise the earliest fruiting sorts out-of-doors. The New Early Dwarf Red, Powell's Early, and Keye's Early Prolific, are all of nearly the same type, and excellent for growing in pots, or for the bottoms of south walls. Both Earley's Defiance and the Orangefield, if grown early and well hardened-off for planting out in May, will produce plenty of fruit on a south or warm border, if well staked and pinched-in.

It is not necessary to manure the growing plants too highly, as it only makes them grow too much to foliage, and if planted on little mounds in the rows, it will check their luxuriance in wet summers. In favourable summers like the past the *Tomato de Laye*, an upright-growing variety, will ripen its large red fruit; but I never could do much with it in the climate of this Midland district.—WILLIAM TILLERY, *Welbeck*.

* * * We learn that Mr. Tillery also thinks very highly of Messrs. Carter's new and very distinct GREEN GAGE TOMATO; indeed, he attests that for juiciness and flavour it is superior to any of the above. Messrs. Carter, by whom it was raised from Hathaway's Excelsior, state that it is very prolific, very early, and ripens well in our English climate. This variety received during the past autumn from the Fruit Committee a First-class Certificate "for its singularly delicious flavour and distinct character." The fruit is of medium size, round, perfectly smooth, and of a lemon-yellow colour tinged with rose. The flavour is distinct and very good. If the plant is amenable to pot-culture it will have its decorative value, in addition to its desirableness for general cultivation.

CALANTHES AS DECORATIVE PLANTS.

THE winter-flowering species of *Calanthe* are exceedingly useful where a large quantity of cut flowers is required for decorative purposes during the months of November and December, and they ought to be grown wherever there is a collection of stove plants. The cultivation is of the simplest description. I grow three bulbs in a 6-in. pot, as being the most convenient size, because as the Calanthes when in flower are devoid of foliage, these pots can be worked in amongst ferns or other foliage-plants. If large masses of flower are required, it is best to pot them in pans. Twenty-four bulbs may be potted in a 12-in. pan. If a pot is used, the best for this purpose is one fitted with an ingenious contrivance invented by Mr. Dominy, of Messrs. Veitch's Nursery, Chelsea, and which is made to fit into any ordinary pot by Mr. Mathews, of Weston-super-Mare. This consists of a concave piece of pottery, perforated with small holes, which, when placed in the pot, has the convex side uppermost, so that the bottom of the pot, usually filled with crocks, is merely empty space.

An excellent potting material for *Calanthes* is turfy loam, with a little rotted manure, and sufficient sand to keep the compost open. If potsherds are used for drainage, they must be quite clean, and a little fibre, free from the finer particles, or some sphagnum moss, must be placed over them, to prevent the compost from mixing with the drainage. Perfect drainage is quite essential to the well-being of the plants, as they require to be freely watered during the growing season, and if the superfluous water does not escape readily, the plants will not give satisfaction. But little water is required during the flowering period; and when the flower-spikes are cut, not any until the young growths show signs of starting from the base, early in February, or later according to the time of flowering. This is also the time to repot, the old and exhausted earth being shaken from the bulbs before doing so.

These remarks apply to the deciduous species represented by *Calanthe Veitchii*, and the different varieties of *Calanthe vestita*. Of the first named there are many varieties, the colours ranging from very pale rose to reddish-crimson, the darker shades being most esteemed, and commercially speaking, of the greatest value. A strong plant of the best variety will throw spikes from 3 ft. to 6 ft. long, and is truly a noble object.

Calanthe veratrifolia should be grown more frequently than it is. The flowers are of the very purest white, and abundantly produced on a strong erect spike, and like those of the rest of the species, they remain long in beauty; although it usually expands its flowers in the dog-days, they will continue unchanged for two months. I find this species succeeds best if some very fibry peat is mixed with the compost.

Calanthe Masuca is another very distinct summer-flowering species, and like *C. veratrifolia*, is evergreen. The flowers are freely produced, and the spike is upright, as in the other. The sepals and petals are of a lilac-purple colour, the lip deep purple. The flowers of this plant are easily damaged by damp. I have removed the plants from the stove to a cooler house when they have been in flower, but they did not last longer in beauty on that account.—J. DOUGLAS, *Loxford Hall, Ilford*.

EARLY PEAS.

NO other among all the vegetables we possess commands or deserves so much of the attention of the cultivator as Early Peas. When employed under our lamented friend, the late Mr. G. McEwen, at Arundel, I well remember him paying a Christmas visit to Scotland. On meeting him at the station on his return, after asking how all was going on, he turned half round; and with such a look as I never shall forget, said:—"A mon, speak of Peas! they fairly beat us in Scotland, having fine rows fully two inches high, green and stubby, while ours are lying in the press." I asked if the frost did not hurt them? "Not a bit!" Now, ever since that time I have sown early Peas in November, from the 9th to the 15th, and for six successive years they have done me good.

service here, beating by from four to six days both those sown in turf and in pots, &c. Now I must give you Mr. McEwen's recipe. Three things he held to be absolutely necessary to ensure success :—First, red-lead the peas, to make them distasteful to the mice. Secondly, watch them daily, and as soon as they begin to crack the ground, put on the rows one inch of coal-ashes, to keep away the slugs. Lastly, when they appear above the ashes, string a piece of worsted 4 in. above the ground to ward off birds. The general cultivation consists in keeping the soil open, and in rodding them as soon as possible, with small, twiggy sticks, which shelter them from those greatest of all enemies to early Peas—the surface winds.

Among the many varieties I have tried, none pleases me so much as the following six in their respective seasons :—First Early White, *Ringleader* ; first Green, *William I.* ; second Early, *Fillbasket* and *Carter's G. F. Wilson*. Of later sorts, *Omega* is both hardy and prolific, and also of first-class flavour, but lacks colour ; while no other Pea I know, has the colour of *Supreme* in October, and when young it is not to be found fault with as to flavour.—R. GILBERT, *Burghley Gardens*.

BECK'S GEM OR TOM THUMB PEA.

THIS is a very excellent Pea, and well deserves a place in every garden. The plant is of a very dwarf stout habit of growth, branches well, and is wonderfully prolific. For places where sticks are not easily obtained, it is invaluable, as it can be grown without any. I had it very fine last season ; sown on the same day as *Sutton's Ringleader* and *Sangster's No. 1*, in adjoining rows, it was but a few days later than *Sangster's No. 1* in coming into use. The situation being rather an exposed one, I had a few short sticks put to them to prevent them being blown about ; they did remarkably well, and the crop was a remarkable one, and much admired. The rows were about 2 ft. apart, and the plants, which were about from 20 in. to 24 in. in height, were covered from the ground to the top with well-filled pods of very fine Peas. Ten or twelve acres of such a crop would, at that season, realise something considerable in Leeds and Manchester markets. Its dwarf stiff habit of growth makes it well adapted for growing largely in market gardens, as it requires no sticks ; it is also a very useful Pea for private gardens, as it can be grown on borders, and in sheltered places, where it would be inconvenient to grow the taller varieties. As the season for sowing early Peas has now arrived, I would recommend those who have not done so before to give Beck's Pea a trial, feeling certain that it will give satisfaction.—M. SAUL, *Stourton*.

CROTON OVALIFOLIUM.

A VERY distinct form of the *Croton* or *Codiaeum variegatum*, which was obtained from the South Sea Islands by the late Mr. J. G. Veitch, and has been exhibited and sent out during the past season by Messrs. Veitch and Sons, of Chelsea. It is peculiar amongst Crotons for its stiff erect broadish leaves, which are oblong-oval in outline, with the end bluntly-rounded. It is thus

quite dissimilar from any of the many forms now grown, and amongst which we can recommend *C. Weismanni* as one of the very best for general decorative work.



CROTON OVALIFOLIUM

In the present variety the variegation is also well marked. There is a broadish central golden band, from which the main veins of the same colour run out, and these are united near the edge by an open net-work of smaller veins also golden.

This colouring produces a very symmetrical form of variegation. It received a First-class Certificate at the Royal Botanic Society's show in April last.—T. MOORE.

GARDEN WORK FOR JANUARY.

FLOWERS.

THE fine open weather which we have had during the Autumn months has been unusually favourable to the re-establishment of the various plants with which the beds are planted, and which have, till the advent of severe frosts, exhibited a freshness seldom seen at this season. The *Laurus-tinus*, that prettiest of winter-flowering shrubs, is blooming most profusely, as is also that highly-cherished plant, the Christmas Rose, which, by-the-by, is now eclipsed by a strong-growing variety, *Helleborus niger maximus*, which is by far the finest form that I have seen. To preserve anything like a satisfactory aspect in the garden at this season, unremitting perseverance with the broom and roller is requisite, as the light falling leaves are whisked to and fro by every gust of wind. Complete the planting of Roses with as little delay as possible; securely stake standards, and mulch over the roots with short manure; examine the security of the labels, &c.

Hardy Trees and Shrubs should now be pruned, allowing specimen plants ample room to develop their individual characteristics. The operator should also studiously grapple with the capacity of the position and its surroundings, having in view landscape effect. Much improvement is often effected with but little expense by judiciously breaking into existing combinations and diversifying the scene. Landscapes may be opened out, as may also distant views or objects of interest, and vistas opened up, all tending to beautify and create new interest. Ground-work alterations of all kinds should be pushed forward during dry weather, also what planting may yet remain to be done, as the press of spring work will be upon us next month.

Conservatories: So many choice plants will now be in bloom, that courage in discarding, in accordance with the space, becomes a material point towards effective display. In their disposition, there should be space enough between the plants for them to be well seen. The flowering-plants should be mingled liberally with ornamental-leaved plants. Palms and Ferns are both elegant and effective for this purpose. Remove plants immediately they show symptoms of decay; dry off by degrees *Gesneras* and tuberous-rooted *Begonias* in a dry temperate medium. *Poinsettias*, after flowering, should be afforded a season of comparative rest, and be partially dried off. Some of the grandest of decorative plants are found amongst the varieties of hybrid *Rhododendrons*, and if those are chosen which have a disposition to bloom early, no plants are more easily forced, and their fresh rich foliage, with gorgeous flowers, form very striking objects, particularly in large houses. The neat and charming *Kalmia latifolia* is very desirable for early forcing, also that favourite plant the *Lilac*, which is so fragrant and serviceable for cutting. There are several suitable varieties, including the Persian and Siberian sorts, which are perhaps the best adapted for early forcing. Large specimen plants in these structures are, at this season of the year, when fire-heat is necessary for the generality of plants in bloom, apt to become dry at the root, unless special attention is directed towards them; they must be frequently examined, giving several good soakings of water, so as to thoroughly moisten the balls, when they are found to be at all dry. *Camellias* must at all times be kept moist at the root, and the atmosphere about them cool by free ventilation, if they are expected to retain their buds till late in the spring. What watering requires to

be done should be seen to early in the mornings, for if much humidity is shut up with blooming plants at night, the heavy state of the atmosphere will cause the flowers to be but of short duration.

Stove: Towards the end of the month a batch for early flowering of *Achimenes*, *Gesneras*, *Caladiums*, &c., may be started; and such kinds of stove plants as are required for early blooming should be cut back and started, choosing for this purpose the most matured. *Allamandas* should be cut freely back to the thoroughly ripened wood, the balls reduced, and then potted firmly, in sound healthy loam, moderately enriched with rotten manure and sand. A portion of the *Stephanotises*, *Bougainvilleas*, and *Clerodendrons* should also be pruned and started. Rest *Aphelandras*, *Euphorbias*, and other plants past flowering, and keep general stock quiet for the present, preparatory for a start next month. Tan and other fermenting materials should be prepared in readiness for renewing the bottom-heat beds.

Forcing-house: Successional batches must be introduced from time to time, not forgetting such plants as *Spiræas*, *Deutzias*, *Dielytras*, *Pæonias*, *Thorns*, *Roses*, *Kalmias*, *Double-flowered Peaches*, &c. Keep *Hyacinths* and other bulbs near to the glass, to prevent their becoming drawn.

Greenhouse: A few of the earliest rested plants of *Fuchsias* should be cut back, and started in heat; also give attention to young plants in a growing state, by promoting a genial temperature—stopping, tying, and watering must have prompt attention—keeping them near to the glass. *Pelargoniums* which have not yet been placed in their blooming-pots should be attended to without loss of time; a few zonal varieties should be shifted on for early blooming; guard against over-shifting. As the majority of plants require a compound of peat and loam to grow them successfully, a good supply should now be stored, so as to be in a healthy state of moisture when required for potting.

Bedding Plants: Do not excite these into growth too early in the season, as no gain is derived therefrom. *Alternantheras*, *Coleuses*, and such plants as are required in quantities, should be started in a brisk growing temperature towards the end of the month, to produce cuttings. Guard against exciting hardy stock into growth, by keeping them closely shut up for the present. Give free ventilation. Prepare materials at once for hot-beds; stable-litter and leaves, well moistened and sweetened by turning, are the best to use for this purpose. There are several kinds of seeds which should now be sown in heat, so as to insure strong plants by planting-out time, such as *Verbena venosa*, *Acacia lophantha*, *Chamaepeuce*, *Cineraria acanthifolia*, *Echeveria metallica*, *Uhdea*, *Geranium canariensis*, *Melianthus major*, *Wigandias*, *Solanums*, *Centaureas*, &c.—GEORGE WESTLAND, Witley Court.

FRUITS.

Vines: With the advent of the new year we look for a little more life in the forcing department, since brighter weather and a longer duration of daylight may be expected. Still we yet have a little longer to contend against long nights and short days, and therefore it is well not to be in too much of a hurry in the forcing of Vines and other fruits. The night temperature of the early vinery should be kept steady at about 60° to 65° till the Vines come into bloom, when syringing must cease for a time and the temperature be raised 10° by night, while in the day during sunshine it may range from 80° to 85°. Give air at all times when the weather will permit; at other times, a little admitted through the ventilators would be beneficial to keep up a circulation in the house. In the succession-house, the temperature should be raised to 55°, increasing by degrees as the Vines progress. Early *Pot-vines* should be assisted with liquid manure

used at a temperature equal to that of the house ; thin the fruit ; stop the shoots, and cut away all useless growth. Old Grapes hanging on the Vines must be looked over often, and all decayed berries cut out ; give just enough fire-heat on cold nights to keep the frost out of the house, which must be well aired at all times.

Peaches and Nectarines : Keep up a moist atmosphere in the early house till the trees come into bloom, when moisture should be withheld, and abundance of air admitted. If, however, the weather is adverse, so that air cannot be admitted with safety in sufficient quantity, recourse must be had to artificial means, by going over the blossoms and brushing them lightly with a small feather, which will greatly affect the *setting* of the fruit. A night-temperature of 55° at this stage is sufficient ; even a few degrees lower is preferable to the use of much fire-heat. Fumigate with tobacco on the first appearance of green-fly. Follow on with the succession-houses, as before directed.

Cherries : The earliest batch of trees should have been placed under glass last month ; these should now be top-dressed, the pots plunged in the borders of the house, and the plants have a little assistance if early fruit is desired. Syringe the trees on fine mornings, and to begin with, let them have a moist night-temperature of 45° ; give air every fine day.

Pines : Plants starting into fruit should be watered, and the temperature kept as before advised ; moreover, if much fire-heat be used, a moist atmosphere is requisite. Keep a steady heat of from 65° to 70° to all succession plants in *dung-pits* ; very little water, if any, will be required at present ; give a little air at mid-day in mild weather, and guard against sudden changes by regulating the coverings at night, and by attending to the linings. Collect plenty of leaves if not already done, and keep them in store for use when required.

Strawberries : Do not give these much water till the fruit-spike is visible, for in *early forcing* keeping the plants dry at first is the best means of securing a crop. The plants should be placed on shelves in an airy part of the house, near the glass ; or it is a very good plan to plunge the pots in leaves in pits or frames. Give plenty of air through the day, and a little through the ventilators at night, place more plants under glass for succession, and keep all plants intended for later work protected from drenching rains.

Melons : Sow a little seed towards the end of the month for an early crop, and prepare materials for making-up beds to receive the plants as soon as they are ready.

Hardy Fruits : In pruning *Wall Pear-trees* the aim should be to keep the *spurs* as close in as possible, otherwise the advantage of the wall will in a measure be lost ; the spurs should be well thinned, and always cut back to the fruit-buds nearest the wall ; if this is continued at each winter pruning, the fruit-spurs will be kept close and neat. Proceed with the pruning of all fruit-trees ; lifting and root-pruning may also be carried on, if not done in October. Prune *Standard trees* in favourable weather, and if moss or scale infest them, scrape or scrub the stems and large branches with a stiff broom, and afterwards dress them with a mixture of soft-soap, soot, and urine. Pay strict attention to the *Fruit Store*, and remove every decayed fruit ; give air, if at all damp. This is a good time to wrap *Apples* in paper, and to place them in drawers or boxes for use in May and June.—J. POWELL, *Frogmore*.

VEGETABLES.

It is but natural at this period to look back and question any former want of success, in order, if possible, to ascertain the source of failure. Seldom has so much and such varied experience been gained in such limited time as

during the past season, and that more particularly in regard to Vegetable culture. In indifferently cultivated and bad soils the crops have, in the majority of instances, been extremely meagre, if not indeed deficient of all real merit; whilst such as have been trenched, manured, and cultivated—as cultivation should be understood—have “given forth their increase,” and stood the drought and the all-powerful aridity with an immunity that has been remarkable. I have personally gained, during this period, many valuable lessons—more than could have fallen to the lot of all, from the simple fact that I had left a garden, that I had trenched and manured to the depth of an ordinary man’s stature, and brought it to such a tilth that irregularities of weather had little effect on it; hence I knew something of the powerful effects of deep culture. This knowledge has, however, been increased by my present and newer experience in this my present field of experiments, in an eastern county, where unfortunately we have the minimum rainfall of this country, with perhaps the greater degree of sun-heat. I say, therefore, that those who would succeed in Vegetable-culture must spare not the spade, the pickaxe, or the muck-heap; nor must they dally with the undertaking, as the sooner the work of trenching, digging, and manuring is completed, after the fall of the leaf, so much the better. There is no risk of a loss of force in the case of any description of soil. If it be heavy, the beneficial influences of the winter’s frosts and more penetrative air will exert the more power over it—its power of conserving such manure as is placed in its keeping being proverbial. If the soil be light, independent of the advantages derived from frost influences and the freer ingress of air into bare soils newly broken up, more time will be given to it to absorb the full benefits of the winter rains, and to settle down, and attain such mechanical solidity as is necessary in the case of all light soils to enable them to sustain a healthy vegetation. Above and beyond all this, the forwarding of all such work has an important bearing on the future.

Successional crops of *Seakale* and *Rhubarb* must be insured by periodically transferring the pots and covering materials from those crowns which are used, to other fresh ones, adding more fermenting materials, with the view of freshening up the old, and maintaining the necessary heat. *Mushrooms*, which should now be freely produced, will need an uniform artificial warmth, between 58° and 75°, according to the state of growth of the several crops, and the advanced stage or otherwise of the successional beds. If the crop is abundant maintain the former, or lower heat, and do not hasten their growth; while, if the supply is limited, urge the beds forward with the greater heat. Prepare fermenting materials, consisting of good Oak-tree leaves and wheaten-straw stable-litter, if possible, as being the best and most lasting (or that which is most like it) by mixing them well together, and turning them over as frequently as they become well heated, in order to sweeten the materials, and to bring them into a condition fit for making hot-beds as soon as possible, for the growth of *Cucumbers* and *Melons*, or where better means exist for these purposes, for the growth of other necessary crops. Bring all permanent work, such as the planting of Box-edgings, laying edging-stones, walk-formation, and such like operations, to a close as quickly as possible.—WILLIAM EARLEY, *Valentines*.

EUCHARIS AMAZONICA.

THESE is perhaps no one place where this plant has been largely grown for so long a period, and at one time in such a quantity, as here. Still, with all our practice, I seek information respecting it. For example, can any one point out from experience how to treat the plant, so as to have it in



J. L. Macfarlane, del

Welbeck Seedling Nectarine

Chromo G. Severeys Brussels

bloom in the same certain way we can bloom a Hyacinth or a Tulip? Some say the plants should be dried off; but drying them off means weakening the bulbs, and withal does not answer the purpose. Others say give them a check, and then follow this up by applying a strong bottom-heat; but in nine cases out of ten, this has not the least effect. Of course, quiet and genial treatment keeps them going, one blooming now and then all the year through; but where space is limited, and one good batch would have done, we are now no further forward in our knowledge of its ways than we were the first day the plant was introduced.—JOHN FLEMING, *Cliveden*.

THE WELBECK SEEDLING NECTARINE.

WITH AN ILLUSTRATION.

THIS Nectarine is a seedling raised by me, and was the result of a cross between the Balgowan and Elruge Nectarines. It was originally selected for its fine colour and flavour. It has now fruited here for several years, and has each season shown its good properties, the fruit being of the largest size for a nectarine, and nearly black in colour when well ripened, and then its flavour is delicious. This year the original tree bore a very heavy crop, from which the specimens figured were selected. A yellow-fleshed Nectarine, a seedling raised between the Pitmaston and Mr. Rivers' Pine-apple Nectarines, has fruited with me this autumn for the first time. It is of a larger size than the Pine-apple, with its fine dark colour on the sunny side, and it also has its rich flavour, and therefore promises to be a variety worthy of growing along with the new kinds lately introduced.—WILLIAM TILLERY, *Welbeck*.

* * The specimens of this fine Nectarine which Mr. Tillery sent us were not only exceedingly beautiful in appearance, but were also most excellent in quality. Our notes taken at the time run thus:—Leaves crenated; glands reniform; flowers small. Fruit as large as those of Balgowan, in some cases roundish-ovate, in others rather depressed, with a well-defined suture. Skin almost wholly covered with dark red, the shaded parts showing a little watery or pale green ground-colour, while the most exposed parts are of a very deep purple-red, sometimes slightly speckled. Flesh greenish-white, red at the stone, full-flavoured, very juicy, rich, and sugary. The flavour is brisk, yet luscious, and altogether it is one of the very best Nectarines we have ever tasted.—T. MOORE.

CHATER'S NEW HOLLYHOCKS.

IT is now very nearly thirty years ago since Mr. William Chater, of Saffron Walden, offered to the public and sent out the first selection of improved and named Hollyhocks—a flower which he, with so much honest pride, terms “one of our noblest garden plants.” At that time, Mr. Chater had taken up the work of the improvement at the point where it had been dropped by the late Mr. Charles Baron, and from that time onwards, sometimes assisted in the work by other intelligent and enterprising florists, and sometimes standing

almost alone, he has continued to announce a batch of new varieties yearly, and consisting either of his own seedlings or those of the Rev. Lord Hawke and other well-known cultivators.

Mr. Chater some time since gave us a foretaste of his new varieties of the present year by sending to South Kensington examples of seedling flowers. While they showed undoubted signs of high-class quality, they were wanting, to some extent, in two characteristics that have always distinguished Mr. Chater's flowers in later years,—size and fine finish. Two influences had been sorely felt in the Hollyhock grounds at Saffron Walden; one was the drought of the past summer following on the heels of damaging frosts in early June; the other was the ravages of the Hollyhock disease. In spite of these, however, Mr. Chater has kept his stock together, and certain I am, from what I saw of the varieties at Saffron Walden during the past summer, that they will prove worthy successors to many fine flowers of the past ten years.

Owing to the causes above mentioned, but one variety, *Rose Suprême*, received a First-class Certificate; the exceedingly fine and full flowers are of a rosy-carmine hue, very bright and effective, and they form a noble spike for show purposes. The remainder are as follows:—*Duke of Edinburgh*, reddish crimson, a fine large full flower, and a noble spike; *Duchess of Edinburgh*, soft silvery-peach, at times almost white; a medium-sized flower, forming a fine spike; this variety has a close habit of growth, and it is therefore requisite that the buds be thinned out to obtain fine flowers—the three foregoing are all tall growers. *Ernest*, apricot, pleasingly tinged with salmon, fine high bold flowers, very pretty and distinct; *Emma*, salmon-flesh, large and well-filled flowers of the most approved symmetry, and forming a fine spike—these two are of medium growth. *Golden Queen*, rich golden yellow, large bold flowers of the finest quality, and makes a grand spike; *Rosy Queen*, delicate rose, deepening towards the centre of the flower, very fine quality—these two are tall growers. Lastly, *Selina*, very pale creamy flesh, with deep carmine base, very pretty and distinct, and quite novel in point of colour—this is a medium-growing variety. All these are Mr. Chater's own seedlings.

Here is a list of twenty-four of the finest flowers in cultivation:—*Alba superba*, pure white; *Black Gem*, glossy blackish maroon; *Competitor*, deep rich purple; *Eclipse*, bright rosy red; *Edward Speed*, French white, suffused with deep purple; *Eleanor* (Hawke), soft pale rose, a greatly improved Willingham Defiance; *Emperor*, crimson-maroon; *Exultium*, rich shining maroon; *Fire King*, bright glowing reddish crimson; *Golden Drop*, perhaps the deepest and brightest yellow in cultivation; *Jessie Dean*, clear apricot, sometimes tinted with salmon; *Joshua Clarke*, brilliant cherry; *Junia*, pale primrose, suffused and stained with purple; *Leviathan*, bright reddish rose, very fine; *Lord Napier*, deep glowing scarlet-crimson; *Midnight*, deep glossy maroon; *Mrs. W. Chater*, pale flesh, the colour deeper at the base; *Nonpareil*, rich dark purplish maroon; *President*, yellowish buff, heavily suffused and tinted with rose; *Rose d'Amour*, beautiful rosy

peach; *Ruby Queen* (Hawke), deep shining ruby; *Walden King*, bright scarlet; *Walden Queen*, beautiful soft delicate flesh; and *Walden Primrose*, clear pale primrose.

It may be added that of this list of flowers, all are seedlings raised by Mr. Chater, with the exception of two raised by Lord Hawke.—R. DEAN, *Ealing*.

HOW TO CLEAN GRAVEL WALKS WITH SALT.

TO maintain garden walks in the best of order, and free from weeds, is often a very difficult task, especially where the means and assistance at the command of the gardener are inadequate to the extent of ground allotted to his charge. Walks, moreover, to be really smooth and pleasant to walk upon, require either to be hand-picked or salted, and never touched by hoe or rake, which only bring the gravel to the surface, and leave the binding materials beneath.

The plan we practise here is so simple and effectual, that I will try to explain it for the information of the readers of the *FLORIST*. Instead of boiling-water to melt the salt and applying it hot, as is done by Mr. Fleming's method, we simply put the salt into cold water, at the rate of $\frac{1}{2}$ lb. to the gallon of water. The water-cask we use holds upwards of a hogshead, and 28 lb. of salt is put at one time with 56 gallons of water; while one man fills in the water another is stirring the salt, and by the time the proper quantity is in, the salt has melted, and the salted water is ready to move away to where it has to be applied. The two men, being each provided with a large watering-pan having on it a widish-spreading rose, commence watering by facing the centre of the walk, and keeping their hands low, they move along the sides for a short distance first, so as not to allow any of the water to be nearer the box-edging or grass verge than about 4 in. They then turn into the centre of the walk, and apply only sufficient to make it wet all over the surface. This small quantity soon dries up and leaves the walk with a whitish appearance, which remains until rain falls to wash it down; and then, as soon as it becomes dry it assumes a bright and clean appearance, and will keep so throughout the season.

The great desideratum is, however, to make the application *only* when the walks are dry, and the weather clear and hot. Any time during the month of April is a suitable period. I prefer the coarse salt to fine. What we use is the same as the fish-curers make use of. The cost here is £2 per ton.—J. WEBSTER, *Gordon Castle Gardens*.

TILLANDSIA MUSAICA.

THIS handsomely marked Bromeliaceous plant, from the United States of Colombia, was sent out last season by Mr. W. Bull. It is a stove epiphyte, and as the illustration shows, is very handsomely marked. The leaves which, as usual, sheath each other at the base, are somewhat channelled, recurved towards the apex, where they are either blunt or have a short mucronate

point; they are about 1 ft. long and 2 in. broad, pale yellowish or grayish-green, marked at short intervals, in transverse patches, by dark green flexuous broken



TILLANDSIA MUSAICA.

veins, which give them the appearance of being marked at these points by lines of illegible writing. On the lower surface the marking appears in the same form, but of a dull wine-red colour. The flowers are white, with scarlet bracts, and

grow in a small bunch at the end of a scape as long as the leaves. It is a very interesting member of the group to which it belongs, and will be appreciated by those who delight in curious leaf-markings.—T. MOORE.

FRUIT-TREE TRAINING.

NOTWITHSTANDING all the ingenuity of those who have of late years made advancement in hardy fruit-culture, and adopted new systems of Training trees, they have not been successful in leading cultivators in general into the same line of practice, nor have they yet been the means of creating any general enthusiasm among the majority of cultivators of hardy fruits. It is indeed only in few cases that the word “cultivator” can be applied to the growers of hardy fruit.

If there is any branch of horticulture that has fallen into the shade, or made a retrograde movement, it is Fruit-tree Training. The progress which the bedding system has made, and the attention which it has received, must bear the blame of banishing much of high-class gardening, such as specimen-plant growing, improvement of landscapes, &c., from our midst; and “bedding” may also be blamed for the secondary attention which is now accorded to fruit trees on walls. This I cannot believe is as it ought to be, but the facts remain that one may travel over all the gardens in a county and not meet with a dozen thoroughly well-trained trees, and we may search almost in vain to find a young gardener who either knows or cares anything about training.

One of the most prevalent evils to be met with is crowding the shoots thickly over the wall, leaving no room for the sun’s rays to exert their power in maturing buds or perfecting the quality of the fruit. It is often supposed by the inexperienced, that the more wood and buds a tree has, the more plentiful will be the fruit, but there cannot be a greater fallacy.

The system, or rather want of system, of sticking in a shoot to the wall where room can be found for it, only leads to confusion. A main stem should be taken up for a few feet, and enough shoots taken from it to furnish the whole of the space allotted for the tree. These shoots should not be closer together at their extreme points than 12 in. or 15 in. Plums, Apricots, and Peaches need not be any closer together than Pears, as shoots can be taken from the main rods to fill up as much of the wall as may be necessary. If the spur system is preferred for stone fruits, the practice is as easily carried out as with pears, and this saves much labour in the way of driving and drawing nails. The branches and side-shoots from them may be tied to the same nails, avoiding altogether the use of shreds—which are at best a somewhat barbarous necessity in a garden; and the destruction of the walls by continually drawing nails is most objectionable. The harbour thus formed for vermin is also a great source of annoyance.

In the case of Peaches, Morello Cherries, or any trees where much young wood is annually cut out, each old shoot can be replaced with a growth from the lowest bud, and when the old one is discarded, the young one may be tied to the

same nail. Cuba bast or some of those modern substitutes for it is all that is necessary for fastening trees; we have not used a shred for many years. The expense of shreds and nails saved by systematic training is no mean item, and the saving of labour is also of considerable moment.

I should consider it now-a-days a special treat to visit a garden where all the walls were quite covered by well-trained healthy fruit-bearing trees. It is as much credit to a cultivator to have his trees in good order, as anything else in connection with a garden.

A few years ago I visited a large garden which bore a wide reputation for finely-managed wall-trees, but great was my disappointment when I saw the pear walls entirely clothed with branches scarcely four inches apart, and was told they seldom carried heavy crops, though they flowered well. The reason was not far to seek. The gardener (who had lately come to the place) was taking advantage of every opportunity to reduce the number of branches to at least one-half, and what I admired as much as his skill, he was renovating the whole place without censuring his predecessor in any way, relying on works rather than words. It is much to be wished that such a spirit was more common among gardeners, when they succeed men who have laboured in the same field. As it is, we may often put down the snarling of one practitioner at his predecessor's labours, as an excuse for his own want of ability.—M. TEMPLE, *Blenheim Palace*.

LATE PEACH DESSE TARDIVE.

I can recommend the above as a good late variety, later than any others we have on the open wall. The tree is of vigorous growth, and appears to stand the spring frosts better than many other sorts. On a young tree, we had some very fine fruit, not only as regards size and colour, but also flavour; these were ripe on October 12th, and from their sound and good quality, I am persuaded they would have kept for some time after pulling if required, had they been put in a proper place.—A. HENDERSON, *Thoresby*.

WATERING COOL ORCHIDS.

THE note in the last number of the FLORIST with reference to the Cool Orchids at Trentham is a very interesting one, but the part which refers to the use of *cold* water, summer and winter, is calculated to mislead young or inexperienced cultivators. The plain fact given, namely, that the Trentham plants are healthy and vigorous in spite of the use of cold water, does not prove that it is the best for them; indeed, I fully believe from my own experience, and from the experience of others, in the culture of these plants, that the Trentham plants would have been better in every way had tepid water been supplied to them. I am fully convinced that no class of plants (excepting Aquatics, of course) requires more water than the cool-growing Odontoglots, Orchids, and Masdevallias. One famous grower of these plants plunges the pots in a vessel of tepid water, and holds them there until the compost has become

thoroughly saturated ; this plan he considers better than dribbling water on the top of the compost, a procedure which leaves one uncertain as to whether the ball is well moistened or not. The same grower uses small pots (48's and 32's), and so full of fine fleshy white roots are these that I have seen him repeatedly take hold of the leaves above the bulbs and lift them from the trenches when watering in this manner. The remarks as to sphagnum-moss are very good, and it is very rare to see any Orchid unhealthy when the surface is covered with this material in a thriving state.—F. W. B.

NEGRO LARGO FIG.

IT is very satisfactory to hear so excellent a report of the new *Negro Largo Fig*, from so good a grower as Mr. Henderson, of Thoresby. The great merits of this Fig do not consist merely in its size, its lusciousness, or its beauty, much and uniformly as these testify in its favour, but include also its great prolificacy, and its characteristic property of bearing fruit when very young—good qualities, the existence of which Mr. Henderson so thoroughly confirms. It may be stated as a fact that the smallest plants when being “worked,” and such as may sometimes possess but three or four pairs of leaves, have produced their two or three fine, well-finished, and well-ripened fruits. What greater recommendation can any Fig have than this?—WILLIAM EARLEY, *Valentines, Ilford*.

PECULIARITIES OF VINE-CULTURE.

THE arrangement of the atoms that constitute the Vine is an old story, yet it is never tedious like the “twice-told tale.” The corn and wine of Homer, with the canisters of bread, and the flagons of wine, show clearly that the culture of the Vine was studied in those early days, not to mention the instances in the Old Testament, wherein we read of wine pressed from grapes in wine-presses, differing perhaps not much from those of the present day. The Vine is always a determined grower, and a sure fruiter, having all the perseverance of a weed when once established. It is this free-growing character of the Vine that has misled so many as to the true methods of culture, for anybody can grow it, in pretty nearly any locality in the kingdom, not too far north. The wonder is that a plant so handsome in its foliage, is not more grown than it is for its shade, leaving out all ideas of fruiting it ; besides, green grapes, sour as they are, may still be used like green gooseberries, where there can be no hope of their berries ripening.

In cultivating the Vine in well-appointed glass houses, we have the advantage of studying the proclivities of the plant, for there seems to be an intelligence among the atoms of this plant that leads them to run in a certain rut, and to exhibit with great vehemence either love for or aversion to the treatment given them. For example, the radical blunder of having a good vinery with a bad border, will manifest itself by the shabby show of fruit and the plentiful supply

of aërial roots, indicating almost as clearly as words could express, that if such a Vine had been taken up in autumn, and some 9 ft. or 10 ft. of its stem laid in a new border of well-prepared compost, we should not have had to wait for fruit; while the roots, instead of issuing into a moist atmosphere under the shade of the useless foliage, would have run wild into the well-prepared medium of the fresh Vine-border. Why, the very fact of the roots issuing always from the under-side of the Vine, and never from the upper side, in the vinery, would confirm my statement that its atoms had intelligence enough to run on their own tramway, and take downward and bear fruit upward.

In propagating the Vine by "eyes"—that is to say, by buds with an inch of vine above and below the bud—we have a kind of truncheon with only one bud to animate it, and yet we never think of its not succeeding. Many years ago, a long cane was coiled into a large flower-pot, with an idea that by rooting through all its length, the cane might bear fruit abundantly; and as this weedy plant has always accommodated itself to good or bad treatment, the crop was fairly good, but nothing extra to warrant any one going farther in that direction. This was carrying the theory of rooting as far as it would go, and the Pot-vine growers have returned to well-ripened canes, and have not been disappointed. Much of the success of Pot Vines is to be ascribed to the even temperature afforded to root and branch, as both are housed, and not treated as we often see Vines—the leaf in a first-class carriage going at railway speed, and the poor root an outcast doing the "tramp" foot-sore.

High-class cultivators in our northern counties have warmed their Vine-borders by means of hot-water pipes, but the effect has often proved like that of warming a church, where the preacher was cold—much good coal wasted. In the zone or belt of climate where the Vine succeeds in the open air, the foliage and the feeders have their heat meted out to them; and the comparative coolness of the feeders, and their supply of moisture, may be said to be their sum of happiness. But however happy these feeders may be in their present locality, they cannot remain there, for they must travel. Whoever has watched closely aërial roots, will comprehend the movements of terrestrial ones, and although he may not see their mode of working, yet he must provide their travelling equipage, for they will go downward for moisture like a well-sinker, and run ahead and right and left in search of crude manure convertible into food. The action of a distant root upon its foliage seems to be like the lightning's flash, if it be not identical with that marvellous agency, for surely there is a force able to pierce the clod and make a way for the sponge-like bodies that are the forerunners of the roots, if they are not the roots themselves. The chemical character of loam, or clay, or fuller's-earth, enables these substances to disinfect manures that may come in contact with them, and in so doing, a mild and healthy medium is got for the roots to run into. Hence the rich bone-manure and turf of loamy soil have done such wonders in the way of Vine-borders, where whole dunghills would have failed.

Some plants travel above-ground, and some under-ground ; thus, we see the Strawberry-plant place its runners with such skill, that we could hardly believe it possible if we did not see examples of it by thousands. The Raspberry-plant, the Rose, and many others, travel under-ground, and send up suckers in fresh pasture, with something like forethought to provide against want by new plantations. When the tailor wants to pass thread through cloth, he uses the steel-pointed needle, which not only makes the hole, but leads the thread ; but when the root has to penetrate the clod, it puts the soft spongy part to the front, and yet it finds its way through. So wonderful is the principle of vegetable life, that we have either to beg the question entirely, or borrow a power able to bore hard clay clods, and when needful to up-heave a flag-stone, hard and heavy, that a few mushrooms may give their spores to the world. It is therefore clear that the travelling of plants and their extension is done under a Leader, who has not only the power but the method to deal with this world of living vegetable substances, vast and various as is their still life.—ALEXANDER FORSYTH, *Salford*.

THE ALTHÆA FRUTEX.

THE Syrian Hibiscus, better known as the *Althæa frutex*, is one of the handsomest of deciduous summer-blooming shrubs, and one of which there are many varieties to be found. They are not, however, nearly so often met with as their merits deserve, and it is with the view of recommending them strongly, either for permanent positions in the shrubbery, or for conspicuous positions on lawns, that we now refer to them.

As will be seen from the engraving, borrowed from Hemsley's *Handbook of Hardy Trees, Shrubs, &c.*, the leaves are ovate, with a wedge-shaped base, and deeply cut into about three lobes. The flowers are large, produced from the axils of the leaves on the young shoots, and are so freely produced about the end of August, that for some two or three weeks the trees are literally covered with them. The plant is of bushy habit and grows from 6 ft. to 8 ft. high. The varieties have some of them double and some single flowers, and one has variegated leaves. Probably though not the most durable, the single-flowered sorts are the most beautiful, the Painted Lady, whose flowers are white with crimson spots, being particularly charming. The Single Purple, with purplish flowers and deep crimson spots, is also very handsome. The Double White and Double Purple are also desirable varieties. In a word, any or all of them should be freely



HIBISCUS SYRIACUS.

planted wherever hardy deciduous flowering shrubs can be fitly introduced ; but they will be most effective if planted in groups of one colour.—T. MOORE.

GARDEN GOSSIP.

THE establishment of the Pelargonium Society has given rise to a discussion of some interest on the subject of *Hybridising Plants*. On another page (23) will be found a short note on a cross between *Pelargonium* and *Geranium*, supposed to have been effected by Mr. Lowe. Mr. Grieve, in a very suggestive letter, asks if it is possible that the progeny can be in any degree affected by the application of foreign pollen to the stigma, after the bloom has been already fertilised by its own pollen ; and remarks that if this were admitted, it might account for the ' queer ' seedlings raised by Mr. Lowe. In one experiment of his own he applied the pollen of a Variegated *Pelargonium* to the stigma of an Ivy-leaved variety, the next day after it had been impregnated by its own pollen, and that the result has been the production of seedlings, as yet unbloomed, of such varied appearance, that he can only account for it by the supposition of the influence of the second pollen. Dr. Denny's experience points to the prepotence of the male parent. This prepotency is disputed by some growers, but in his experiments is so invariable that it is impossible to mistake it. His mode of manipulation he explains as follows:—"When I have ascertained by the means of my lens that the stigma is in a virgin and suitable condition for impregnation, I immediately smother it with the pollen I purposed employing ; and it is owing to this smothering of the stigma by the pollen, as I am informed by Professor Duncan, that I derive the prepotent influence of the male parent ; because, he says, he has found by careful experiments that if the ovule be impregnated by the application of a single grain of pollen to the stigma, it is nourished principally by the mother plant, which the offspring will in that case most resemble : but if a large quantity of pollen be applied to the stigma, the ovule would derive nourishment by the superabundant pollen-grains being absorbed and carried down to it, and then the offspring would resemble the pollen parent. The value of the suggestion contained in Mr. Grieve's inquiry cannot be over-estimated, for should the theory be borne out by continued experiments, it is impossible to say to what extent of practical importance the knowledge of it may lead. It may enable us to obtain breaks into new forms and varieties of plants or fruits that could have been obtained in no other way, or, at any rate, without paying the penalty of sterility in its products ; in fact, should such influence really be found to exist in foreign pollen applied after impregnation, I look forward to the possibility of obtaining results equal to the union of two distinct species, and yet to preserve fertility."

— In an interesting article on *Bouquet-making*, recently published in the *Gardeners' Chronicle*, and in which the difference between a bouquet and a nosegay are graphically set forth, the following account is given of the mode adopted by M. Vandriessche-Leys, of Ghent :—The bouquet, before completion, passes through several hands, and is composed of several elements. First, the master takes a basket and gathers suitable flowers ; these he hands to an assistant, who mounts them, separately, by tying them to the top of a dried Rush, or other slender and light support. As each flower is mounted, he sticks the lower end of each artificial flower-stilt into a box of sand, which thus serves as a pin-cushion. The arrangement of the bouquet is not his business, but Madame's, whose taste is supposed to be superior. She has circular cushions of moss ready-made and kept in stock—a bunch of Box from an edging is sometimes used for small and low-priced bouquets—and on one of these moss-cushions she arranges the stilted flowers like pins, until the desired arrangement is completed. The whole is then slipped into a cardboard case or holder fringed with real or imitation paper lace, and the thing is done. No engraving, without colour, would give an idea of the beauty of the effect produced. That beauty, unfortunately, is short-lived. All that can be done to prolong it is to sprinkle the bouquet's surface with water, and to keep it closely covered in a box during the night. A Nosegay is a more natural bunch of flowers, which can be kept for a while by placing their stalks in a vessel of water.

— THE testimony of Mr. Coleman, of Eastnor, in reference to *Venn's Black Muscat Grape*, is that it has all the good qualities of *Snow's Muscat* *Hamburgh* and *Madresfield Court*, without their defects. It has a good con-

stitution, shows, sets, and finishes heavy crops of fruit under Hamburg treatment, but it ripens about a fortnight later than the Hamburg. The parent Vine, although unfairly treated, has never been guilty of producing shanked berries; but this may be due to local circumstances, as the hardiest varieties may be induced to shank by a superabundance of, or the withholding of, water from the roots at the time they are swelling off their crops of fruit. I have long entertained the opinion," he adds, "that our Black Muscats, particularly the much-abused Madresfield Court, have been overdone with fire-heat; but knowing at the outset that Venn's Muscat does well under temperate treatment, I would suggest its being grown in every house in which Hamburgs succeed, fully convinced that the time is not far distant when every garden having the slightest pretension to Grape-growing will be considered incomplete without this valuable acquisition to our black Grapes.

— OF large-flowered *Chrysanthemums*, the following sorts are recommended as being specially adapted for being grown as specimen plants, and also as being very fine for exhibition purposes:—*Mrs. Halliburton*, creamy-white, full, and finely incurved; *Mrs. George Rundle*, white, full, and symmetrical; *George Glenny*, a sulphur-coloured sport from *Mrs. G. Rundle*, an exact counterpart as to size and symmetry; *Guernsey Nuggett*, pale primrose-yellow; *Jardin des Plantes*, the finest yellow *Chrysanthemum* in cultivation, being of a deep yet vivid hue; *Golden Eagle*, Indian red and orange; *Mr. Gladstone*, dark chestnut-red, very fine; *Julia Lagravère*, bright crimson-red, one of the reflexed type, and very beautiful; *Prince of Wales*, maroon, the reverse silvery-lilac; *Progne*, amaranth-purple; *Faust*, rosy purple; *Lord Derby*, dark purple, very fine; *Empress Eugénie*, delicate rosy-lilac. The *Chrysanthemum* seems to have been particularly sportive this year. The sulphur-coloured *George Glenny*, itself a sport from the white *Mrs. George Rundle*, has thrown a rich golden sport; one of the Pompon varieties has given a sport in which the flowers are partly white and partly cinnamon-red; and a fine bronzy-crimson sport has been obtained from the *Golden Cedo Nulli*, of which variety several other sported forms are in cultivation.

— MR. TYERMAN writes of *Desmodium penduliflorum* that he has had it in cultivation during the past four years, and has no doubt of its perfect hardiness. It is a plant of rapid growth, producing woody-looking stems about 5 ft. high, but they are too slender to sustain the masses of beautiful rosy-purple flowers, and require a stake to support them. It is the nature of the plant to die down to the ground, but not from the effects of frost alone, as his plants were ripened down this season before being subjected to frost sufficient to destroy vegetation. Each year adds fresh vigour and increased beauty to the plant, which is greatly to be recommended.

— ONE of the best-grown examples of the *Anthurium Scherzerianum* which we have anywhere seen, was met with a short time since in the collection of Lord Hill, at Hawkstone, under the care of one of the trusty veterans in the ranks of British gardeners, Mr. Daniel Judd. This specimen measured fully 3 ft. across, and was remarkable for the strength and vigour of its inflorescence, some of the spadices measuring as much as 15 in. in length. The plant was still in perfect health and vigour, and rapidly increasing in bulk. In the same house was probably the largest example to be found in this country of the exceedingly rare Nicaraguan Palm, *Geonoma Seemanni*, which was blossoming freely.

— AT a recent meeting of the Pelargonium Society, Mr. Pearson stated that a *Cross between the Pelargonium and the Geranium* had been obtained by Mr. E. J. Lowe, of Highfield, Nottingham. Mr. Lowe had for many years been trying to raise a blue *Geranium* by crossing the *Geranium sanguineum* with *Madame Vaucher Zonal Pelargonium*. Many of these seedlings have produced red, rose, and white flowers, some with curious foliage, but few would believe they were really the result of the cross attempted. The flowers are lilac-pink, and in shape the exact opposite of what a florist would consider perfection, the petals being long and narrow.

— AN excellent *Paste for Fixing Labels on Glass, Wood, or Paper* may be prepared by dissolving eleven parts, by weight, of common glue, soaked a day before in cold water, seven parts of gum-arabic, and some rock-candy, in fifty-six

parts of water, at a gentle heat, with continued stirring until the mass is uniform. Labels brushed with this and dried will, it is said, adhere firmly, if simply moistened with saliva when used.

— **L**IVERPOOL is to be supplied with a *Public Garden and Aquarium*. The winter garden or floral palace is to be a structure of iron and glass, 200 ft. in length, by 80 ft. in width, and 95 ft. in height. The central dome will be 80 ft. in diameter, and 200 ft. in height. A theatre, large aquarium, and "valley of rocks" are also projected. The latter is intended for the exhibition of "Ferns, mosses, fungi, lichens, ivies, flowering creepers, and alpine shrubs," and will be constructed of the natural red sandstone of the district, with cascades, rustic bridges, &c. The gardens will consist of a series of geometric terraces encircled by picturesque belts, and will be laid out by Mr. Masey, landscape gardener.

— **M**R. W. K. BRIDGEMAN, who has made some valuable experiments on galvanism and plant-culture, writes that the best way of using *Sulphur in the Destruction of Mildew* on Vines is to dust the upper surface of some of the leaves directly under the glass at the lowest edge of the roof; the vapour being then driven off by the sun, ascends among the rods where it is wanted.

— **T**HE eleventh edition of *The Elements of Botany*, published under the direction of a Committee of the Society for Promoting Christian Knowledge, has just been issued by Messrs. Longmans. The demand for it may be taken as an indication of its fitness for use in families and schools, for which it is specially designed.

— **T**HE *Gardeners' Year-Book and Almanac* for 1875 has recently been issued. It contains much useful information put into a handy form for reference; and embraces also a most carefully compiled summary of the novelties of the year, in the way of fruits, vegetables, plants, and flowers.

— **M**. BAILLON has lately been experimenting on the *Absorbing Power of Leaves*. He sowed some Peas in a cubical box open on one side only, so that the box could be turned in any direction. Suppose the box to be turned on one side, the plant can be immersed in water without the roots or the soil being wetted. In this manner plants have been kept alive for two months without giving the roots a drop of water.

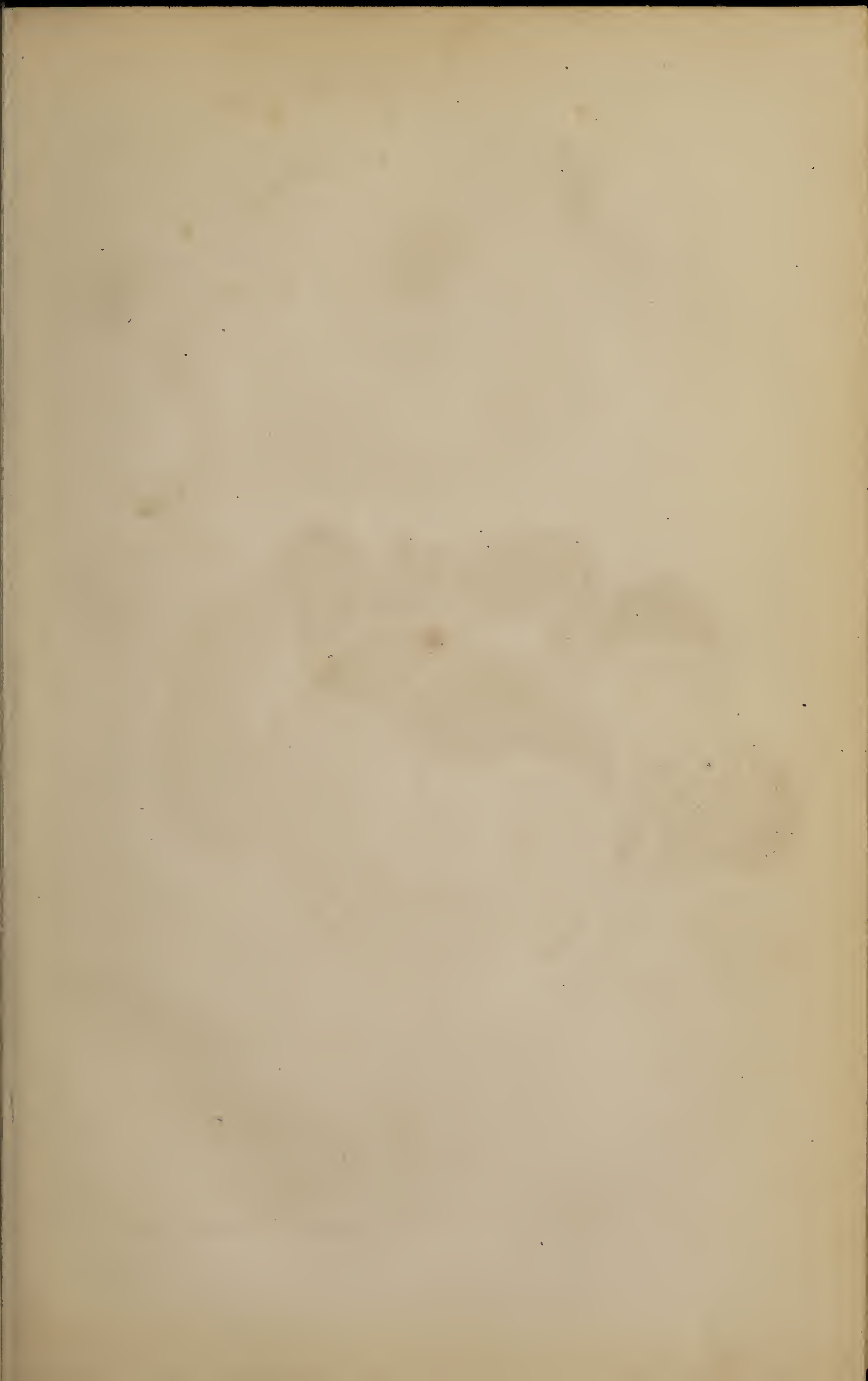
— **A** CONTRACT has been entered into with Mr. T. G. Messenger, of Loughborough, to erect a *New Range of Glasshouses*—which were much wanted—in the Royal Botanic Garden, Glasgow. The range is to be a half-span—272 ft. long and 17 ft. wide, with a 3-ft. frame running the whole length. The whole range is to be heated by one boiler, a new one, designed for this special purpose by Mr. Bullen.

Obituary.

— **M**R. GEORGE BROWN, for 45 years gardener to Earl Powis, at Powis Castle, Welshpool, died on October 24, in his 78th year. He was a highly talented practical gardener.

— **M**R. DANIEL NASH, the senior partner of the old-established firm of Minier, Nash, and Nash, died on November 28, in his 68th year. He was father of the London seed trade, and greatly respected.

— **M**R. ALEXANDER TAIT died at Edinburgh, on December 13. He was for many years foreman to Messrs. Dicksons and Co., and subsequently to Messrs. Downie and Co., and was also a successful collector and cultivator of British Ferns.





Pelargoniums

J. L. Macfarlane, del.

1, Constance. 2, Crown Prince.

Chromo G. Severeys

NEW SHOW PELARGONIUMS.

WITH AN ILLUSTRATION.

SO rapid and so great have been the improvements effected in the Show Pelargonium, that one is often tempted to think we have reached the ultimate point of perfection, and yet year by year our great raisers, notably the late Mr. Hoyle and Mr. Foster, put before us novelties which are admitted to be acquisitions. Two of those exhibited during the blooming season of 1874 we now figure, from specimens communicated to our artist by Mr. Charles Turner, of the Royal Nurseries, Slough. They are remarkable for their distinct character and fine quality, and were both raised by Mr. Foster.

CONSTANCE, the variety represented by fig. 1, is a charming variety, possessing a beautiful soft and delicate shade of rosy-pink, the upper petals being marked with a small black, slightly-feathered spot, shaded with orange, which runs out over the ground-colour so as to give it a flush of brilliancy; the under-petals are in ground-colour like the upper, but without spots; and there is an open, clear white eye. It is a large smooth flower of exquisite form, and was awarded a First-class Certificate at South Kensington.

CROWN PRINCE (fig. 2) is remarkable for its vigorous, free-flowering, and stocky habit. The lower petals are of a richly-painted crimson; while the top petals are of a blackish-maroon, with a bright crimson edge; the eye being large and of a clear white, finely contrasting with the crimson shading on the lower petals.

We believe both these varieties will be sent out by Mr. Turner during the present spring.—T. MOORE.

THE CULTURE OF WALL-FRUITS.

CHAPTER I.—INTRODUCTORY.

THE practice of growing fruits of different sorts in Orchard-houses would appear to be gradually increasing, and very deservedly so, for it is an extremely interesting mode of culture, yielding valuable results, inasmuch as it serves to prolong the season of choice fruits. The Pyramid and Bush-culture of Fruit-trees is also being extensively practised, and is found to be quite a boon to amateurs with small holdings, being useful also to the professional gardener in large places, as yielding an auxiliary supply. Notwithstanding this, Wall-fruit culture must always be carried on to a very large extent. We cannot afford to dispense with the shelter afforded by walls to the different crops in the kitchen garden, and the walls must be utilised. It must, too, be remembered that the flavour of well-grown stone-fruits of all sorts, on walls, is in every case equal, in many cases superior, to that of Orchard-house fruits. With regard to Pears, I am inclined to believe that, taking one with the other, the chances are about equal, both size and flavour being considered. These, should, however, be swelled out of doors during summer, the pots being plunged in the open garden, but the trees then need an enormous supply of water.

This is a subject which ought to receive much attention from the rising generation of gardeners. They must not permit themselves to be led away by the enthusiastic descriptions of those very successful cultivators, who would almost persuade us that in Pyramid, Bush, and Cordon culture out of doors, and Orchard-house culture under glass, we have all we can possibly want in fruit culture, and that walls are unnecessary. This is not so. Walls will hence always be of paramount importance in all the large garden establishments kept up by families of taste, from which fruit and vegetables are required in perfection and in abundance; and therefore the culture of Wall-fruits will always be an important part of the education of young gardeners who aspire to succeed in the future to the responsibilities attendant on the management of these large establishments. They will find that a thoroughly practical knowledge of Wall-fruit culture, and the routine of kitchen-garden management, will stand them in better stead than ever so good a knowledge of what has sometimes been called "toy gardening." While thus writing, I would by no means decry the Orchard-house, as it has established itself on its own merits, and must be studied, and advantage taken of its undoubted utility, but I maintain that it will not supersede wall-culture.

I purpose now to offer a few practical remarks, derived from long-continued experience, in order to draw the attention of the rising generation of gardeners to some of the most important of those principles which must guide their practice. It is no chance work. It is quite possible, by bad management, to spoil the best educated tree ever grown; but on the contrary, an apparently ruined tree may *sometimes* be restored by a skilful hand, well versed in first principles.

The culture of Wall-fruits is essentially artificial, yet at the same time, in all the operations connected therewith, we must be guided by the above-mentioned first principles, which apparently influence the trees when placed in purely natural conditions. Let us suppose a tree planted in a congenial soil and subsoil, with plenty of room for development both upwards and outwards from the centre. The first effort will be, say, from a maiden tree cut back to the surface of the ground to induce it to throw up a strong central shoot; other shoots may break below, but as a rule, they will be quite subservient to the centre one. This shoot in the next season will again elongate itself vertically, and at the same time throw out a number of side-shoots, all of which will be covered with healthy foliage, and in the course of formation will assist greatly in the elaboration of those fluids by which the extension of the roots is very much accelerated, and the beautiful system of reciprocal action between the roots and branches established. This action not only contributes to fix the tree in the ground firmly by its roots, but at the same time to enlarge very much the central stem in order to enable it to carry a good head. So long as food is abundant, and there is ample room all around for the head, the tree will continue to develop itself by greatly enlarging the central stem and strengthening the roots, having apparently a twofold object in view, namely, that of fixing itself firmly by its roots, and of producing, by means of a stout central stem, a large development of head in order

to carry out one of the purposes for which it was designed, namely, to bear an abundance of fruit for the use of man. In doing this, it only obeys the universal law, in seeking to reproduce its kind. This will not, however, take place so long as there is plenty of vigour in the tree, and plenty of food within its reach. Eventually, however, a period of stagnation must arrive, and the tree will at once set about performing its proper functions, and will bear fruit—sparsely, at first, but fine in quality, always year by year increasing the quantity, until at length comes one of those favourable seasons when the tree becomes overloaded with far more than it can bring to perfection, and as a natural consequence is considerably weakened, so that it is often three, four, or five years before it recovers strength sufficient to carry another large crop. Thus the seeds of decay are sown; and those alternate fluctuations from fruitfulness to comparative sterility result in the consummation of another universal law, in consequence of which it becomes necessary to root it out, and plant afresh.

Now it is by studying these natural tendencies of the tress, when in an unrestricted state, that we are enabled to take such advantage of them as to found thereon a system of artificial treatment which, without interfering very materially with them, shall yet bind them as it were to our will, and place such restrictions upon them as to enable us so to direct their mode of growth as to oblige them the sooner to yield up that produce for which alone they are subjected to the hand of the pruner and dresser; and by following up that practice judiciously, to maintain not only the power of producing, but also the continued health and vigour of the tree. This preservation of the balance between the two is indeed the great art of Wall-fruit culture. It is easy to throw a vigorous-growing tree into a fruit-bearing state, long before it would become so by nature's exhaustive processes; but in order to maintain it in health and vigour, we must go back to those first principles, as evidenced by trees in a natural state, and by checking the forward and giving encouragement to the backward tendencies, maintain that balance which results in a fruitful tree, having likewise a healthy and vigorous constitution, so that the fruitful condition may co-exist with the necessary strength to maintain it continuously.—JOHN COX, *Redleaf*.

SCHIZOSTYLIS COCCINEA.

THINKING the above fine Caffrarian plant is not nearly so well known as it deserves to be, I ask to be allowed, through the medium of your pages, to say a few words in its favour, and if possible draw to it the attention of all those whose necessities oblige them to supply a large and continuous quantity of flowers, either in a cut or a growing state, from November until the end of January. As its name implies, the plant in question bears scarlet flowers, which appear on a spike after the manner of *Gladioli*, to which, indeed, the whole plant above ground bears a striking resemblance. The *Schizostylis*, however, has no tubers, but propagates itself by means of underground runners or stolons, which form themselves so rapidly that in a very short time an immense stock can be acquired.

To grow it successfully it should be planted in a very light and very sandy soil. The plants should be taken up annually and divided; every small piece will grow. The best time for dividing the plants is after they have done flowering, which will be about the end of January. They should then be pulled to pieces, and planted in the open ground, in lines about 8 in. or a foot apart, placing the soil rather firmly about the roots. After this they will require no further attention until the following October, when they should be potted up, and placed in a cool house—a resting vinery, or peach-house, or cold pit, or wooden frame. If the frost is just kept from them, they will abundantly reward the cultivator for the trouble. They must not be placed in heat—fire-heat is fatal to them; but the flower-spikes will stand in rooms in water, the same as violets, or any other subject that will not bear fire-heat.

If treated as above, they will commence blooming about the middle of November, and continue in great beauty until the middle of January; large 6-in. pots are very suitable for them, as each pot will then contain from five to ten spikes of flowers, each flower being bright scarlet, and fully 2 in. across.—WILLIAM DENNING, *Norbiton, Surrey*.

SOLANUM HUMILE.

THIS *Solanum* was kindly sent me by Miss Hope, of Edinburgh, last year for trial; and in pots it has flowered and fruited continuously for the last five months, being yet in perfect health and vigour, flowering and fruiting as in the midst of summer. It is, and has always been, in a cool nectarine house, trained on the back trellis, and for this time of year it is really an ornamental plant, with its bunches of tiny honey-coloured berries, borne in the greatest profusion on every twig, reminding one, except in colour, in some measure of *Callicarpa purpurea*. In taste it is “as sweet as honey.” Miss Hope informed me it was given her in Florence.—HENRY KNIGHT, *Floors Gardens*.

THE CUCUMBER DISEASE.

FOR some years past a disease of a troublesome character has infested the Cucumber and Melon, and so far has baffled all attempts to cure it. The substitution of fresh soil, and a thorough cleansing and scalding of the structures, have been fairly successful as remedial measures, but even these have sometimes proved unavailing.

The first account of this disease was published by the Rev. M. J. Berkeley in the *Gardeners' Chronicle* (1855, 220), accompanied by figures of the diseased condition, and of the minute worm-like creatures producing it, these being at the time referred to as belonging to the genus *Vibrio*. In the plants then examined the leaves and stems had become infected with brown spots, while the roots, which had a hot, acrid smell, like that of some crucifers, were covered with knots or excrescences, varying from the size of a pin's-head to that of a nutmeg. The tubercles when cut open were found to contain cysts filled with elliptic eggs, in

which the *Vibrios* were found. When the roots get into this knotted condition, the leaves become unable to bear sunshine, and the plants wither, and ultimately die away.

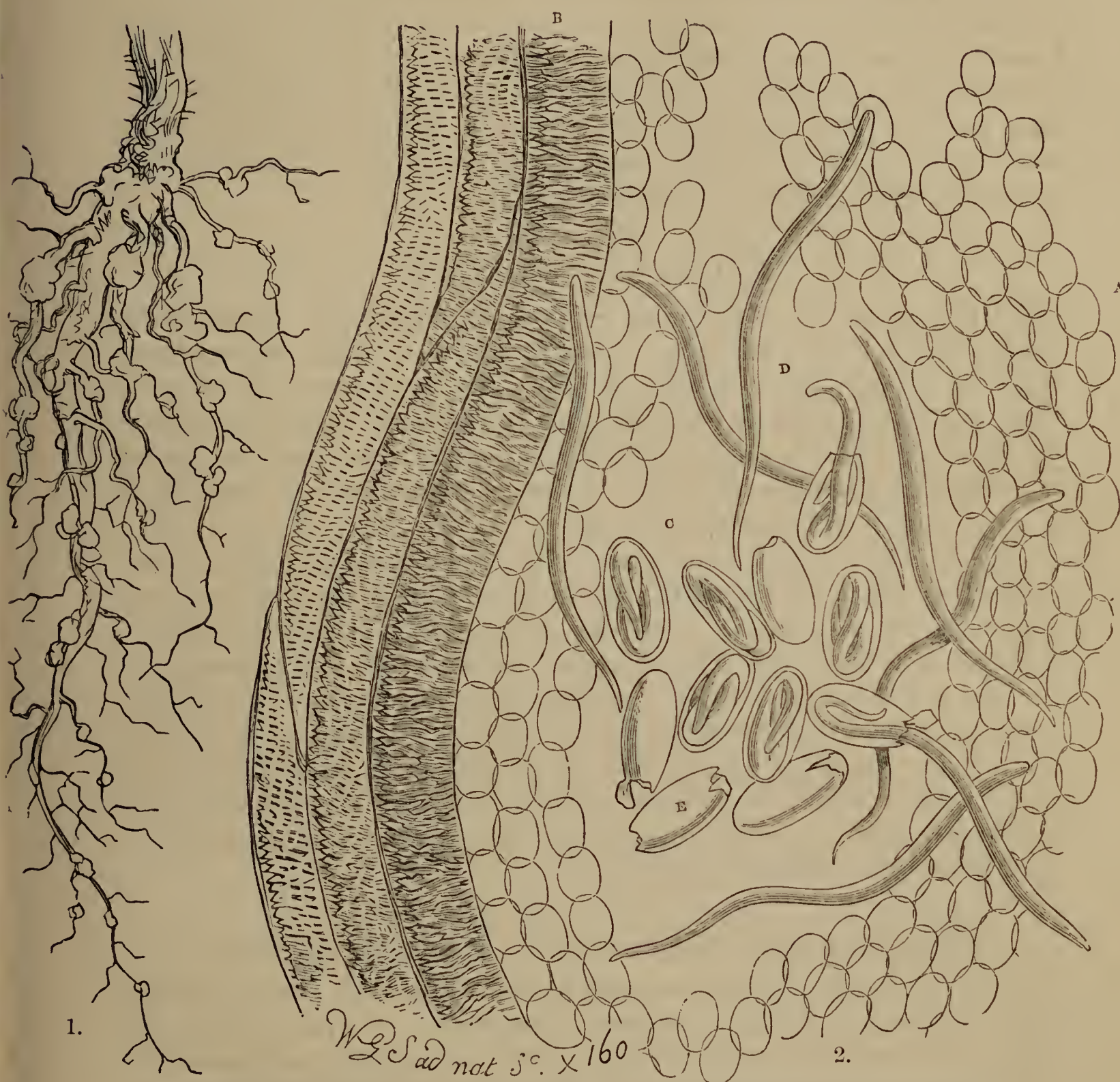


Fig. 1. Diseased Cucumber-root. Fig. 2. Section of one of the Tubercles, enlarged 160 diameters.

Mr. Worthington G. Smith has recently published, in the *Journal of Horticulture* (whence we borrow the woodcut), a magnified illustration of one of the knots or tubercles above referred to, accompanied by the following descriptive notes:—

“Our illustration represents, on the left, the diseased roots, natural size; and on the right, a thin slice through one of the nodules of the root. The latter is an exact reflection from a camera lucida attached to the microscope, and shows the cellular tissue, A; pitted and spiral vessels, B; the worms coiled up in the eggs, C; worms emerged, D; and empty eggs, E, from which the worms have escaped. Mr. Berkeley refers these parasites to the *Vibrios*. The parasite appears to belong rather to the oviparous section of the genus

Anguillula, which includes the "vinegar eel," and except that it is only half the size, it is very similar in all stages of growth to the *A. tritici* [now called *Tylenchus tritici*], found infesting blighted wheat."

Mr. J. Wilson, writing in the same publication, states that the soil is the chief point requiring attention in these cases:—"The less complicated it is the better. I have found that mixtures generally encourage the ambury [or root excrescences], especially when some kinds of leaf-mould are added [the decaying leaves probably favouring the development of the *Tylenchus*]. What I find to answer best is two parts of turfy loam chopped roughly, one part of short litter fresh from the stables, with a sprinkling of half-inch bones."

VRIESIA SPLENDENS.

THIS is one of the old favourites which is too seldom seen in cultivation, although but few things in its way surpass it in beauty and usefulness. As a table-plant, it is when in bloom invaluable, having all the good qualities desirable for table decoration, not being too large, nor obstructing the view; while its showy spikes of bright scarlet bracts insist on claiming the admiration of the beholder, and as it flowers in November and December, it is useful when other things are scarce.

The *Vriesia*, like most other genera of the order, is a stove plant of easy cultivation; and as its close relationship to the pine-apple would naturally suggest, the same treatment as to soil and temperature will admirably suit it; moreover, it thrives either with or without bottom-heat. It is a slow grower, but once in a flowering state, it will continue from year to year without getting too large for the table. From its shyness in throwing up suckers, its propagation is a very slow process, as a single plant will generally throw but one sucker each year; it may, however, be propagated by seed, but I find the seed takes some months to germinate, and the young plants take years to come to maturity.—J. W. LAURENCE, *Farnham Castle, Surrey*.

HIGH-PRICED MEAT—FRUIT TO THE RESCUE.

HOW? Let us see what makes meat so dear. The cattle plague, says one; the drought of the past summer, cries another; the eating of veal and lamb, answers a third, who doesn't care for baby beef and mutton, but likes to slice into a mature joint. Well, all may have helped, but neither of these is the chief reason. That is, growing, ever-growing consumption. More is consumed to-day than yesterday; more will be eaten to-morrow than to-day, and so on and on with each day. Hence the home meadow and root crops, the pastures and fodder-grounds of Europe, the maiden grass-land and rich fodder-plants of the world are strained to the utmost to keep up the meat supply of Britain. Through our enormous European and foreign trades, and our improved systems of preserving meat, the whole world has been laid under contribution, and still the cry is for more and yet more. While that continues, prices will keep up

—rise, may be, higher. It is the old, old tale of political economy, one bullock, with two, five, perhaps a dozen purchasers after it. It is equally obvious there are but two ways of bringing down prices,—an augmented supply or a lesser demand. There is but little hope of the former, in fact, none, and relief can only come through the latter by a gradual change of foods.

No doubt the food habits of nations are about the most difficult things possible to alter, yet are they very much things of habit. One nation or people eats meats chiefly, another rice, a third bread and vegetables, a fourth fruit, and so on. Even within a generation Great Britain has changed its food-habits very sensibly, and cast them much more into a meat channel. It seems therefore possible that these habits might again be so changed as to remove some of the strain from the meat-market, and allow prices to rule lower.

As one step in this direction, I would advocate the growth of more and better fruit. If we are growing more meat, we are also assuredly growing less common fruit than formerly. I do not say we are eating less. Doubtless we are eating more, for an enormous trade in fruit has sprung up with France and other European nations, and also with America, during the past quarter of a century. Neither has there been any difficulty in disposing of any amount of good fruit at paying prices; but if more was grown at home, doubtless still more would be eaten. And more ought to be grown. There are waste walls, roofs, and fences, profitless railway-slopes, and useless pollards enough, to afford suitable space for growing ten times the fruit we do at present. Now, as many such areas are now totally unproductive, this increased cultivation of fruit would bring more of it of better quality within reach of all classes.

Recent advances in horticulture, the cheapness of glass, and the wonderful multiplication of glass structures, will also tend to popularise the use of fruit. Grapes are now grown in all directions by the ton, and Peaches, Nectarines, Plums, Pears, Melons, Pines, &c., in enormous quantities. These are consumed in greater bulk by the higher and middle-classes. And as fashions in regard to diet mostly travel downwards, it is pleasing to note that the current has set in in favour of more fruit and less meat. The changes in the arrangements of the dinner-table of late years—the high place assigned to art and beauty, and fruit and flowers, and the comparatively secondary place given to meat—is a symbol and proof that we are approaching, by slow but sure degrees, a fruit diet.

A FRUIT DIET!—that is the next step; and when that is reached, the tightness in the meat market will begin to slacken. Hitherto the effects of our increased consumption of fruit have told but little on the prices of other articles of food, and chiefly for this reason—most of the fruit consumed has been an extra, something over and above what was necessary, a pleasure to the palate after the serious business of dining has ended. Fruit so eaten is often worse than *wasted*, and results in the consumption of less fruit than before. It disagrees with other food, and creates an unjust prejudice against the wholesomeness of fruit for food. Make a meal of Grapes, Apples, Pears, Plums, Cherries, Peaches,

Pines, Melons, and cakes or bread, and see if they would not prove as wholesome, and perhaps as strengthening, as beef, mutton, pork, fish, or soups. When this stage is reached, the Meat problem will be in a fair way of solution.

Neither is there any fear of loss to the physical stamina, intellectual supremacy, or moral greatness of the nation, by a gradual and moderate change of food. On the contrary, such a change is likely to prove salutary. A mixed diet is probably the most salubrious for man. To derive the full benefit of this mixture, however, he should not eat all foods at the same time, but make a full meal of one of homogeneous character. Hence, by interchanging a fruit meal between two of meat, the full benefit of each would be more thoroughly reaped. Each would choose his own time and mode of making a meal of fruit. If each family would only have one such meal a week, they would doubtless enjoy better health, and before the end of the year meat would be down a penny or more in the pound.—D. T. FISH, *Hardwicke, Bury St. Edmund's*.

GARDEN WORK FOR FEBRUARY.

FLOWERS.

TAKE advantage of every favourable opportunity to forward all ground-work connected with the Flower-garden. It is most important that lawns should receive close attention, to secure a smooth even texture of turf, without which the general effectiveness of the embellishment will be marred, however richly and tastefully the beds may be filled. It is, moreover, an egregious and not uncommon mistake to fritter away, in the shape of flower-beds, every available portion of grass. This is more particularly the case in small places; whereas a far more pleasing and satisfactory effect would have been produced by one-fourth the quantity of bedding-plants, skilfully relieved by masses of flowering shrubs and evergreens, so placed as to preserve a bold expanse of turf.

Lawns that are poverty-stricken and patchy with moss, will be improved by a surface-dressing of fine rich soil. Nothing answers better for this purpose than the charred refuse materials from the compost-yard, allowing it to remain as distributed until early in spring; look out also for a dry period to give a good dressing of soot or lime, and after freely scarifying the surface, sow over with selected seeds of good lawn grasses, and roll down evenly. The spring-flowering plants should now be looked over, and any that have been heaved up by the frost should be pressed down firmly, stirring the surface soil when it is sufficiently dry, and filling up all vacancies which may occur. If *Clematises* of the Jackmanni race are not already pruned, they should now be seen to, cutting down closely to the root such as are grown in low masses in beds. Such as have been grown for years in this way should have the surface-soil removed, and be dressed with fresh turfy loam and rotten manure, which will tend to invigorate them. No time should be lost in completing the planting of deciduous *Shrubs*, for if the work is deferred till later, it is somewhat a game of chance with them, unless they are removed with large balls attached. More particularly is this the case, should dry, searching weather prevail during early spring.

Roses: Nothing is more appreciated than a good supply of Rose-blossoms during the winter months; to insure this, recourse must be had to *Tea Roses*, which are easily forced into flower, and their delicious fragrance renders them

welcome at all times. When houses are specially set apart for their culture, there is little difficulty in having them in abundance. If grown in pots, they may be assisted by a bed of fermenting material, which not only promotes a genial state of the atmosphere both as to warmth and humidity, highly beneficial to vegetation, but is also inimical to insect life. Fully expose the plants to every ray of light, and keep the temperature at 50° to 55° by fire-heat, syringing and otherwise promoting that genial moist temperature so desirable for the encouragement of a healthy growth. Finish the pruning of all pot Roses. Also thin out, tie, or train all hardy sorts upon pillars or walls.

Conservatory: A succession of plants must be frequently introduced here. Amongst the most effective will be *Azaleas*, *Camellias*, *Rhododendrons*, *Roses*, *Heaths*, and *Epacris*, which latter are among the most beautiful and useful of all winter-flowering plants. For example, as a cut spray, what can be more effective for delicacy and purity of colour than *Epacris Lady Panmure*, *E. hyacinthiflora candidissima*, *E. Mrs. Pym*, and many others which are easily brought into bloom? *Amaryllises* (*Hippeastrums*) and *Lily of the Valley*, and well-bloomed specimens of *Calla aethiopica*, with its massive foliage, and quaint, but effective flower-spathes, will play an important part in decoration at this season. I find *Centropogon Lucyanus* a very showy decorative plant during winter, producing its crimson *Justicia*-like blooms in the greatest profusion, in a temperature of 50° to 55° . Another very desirable, but neglected plant, which produces its neat masses of pure white blossoms most profusely during mid-winter without forcing, is the *Crassula lactea*, a plant worthy of more extended cultivation. *Linum trigynum* is another most valuable and effective plant in conservatory arrangements, its pure yellow blossoms contrasting so effectively with the majority of plants now in flower.

Stoves: The efficiency of fermenting materials in hothouse-beds must now be insured, either by renewal or by additions, as a sharp bottom-heat will be advantageous in starting the various subjects into growth, as well as facilitating propagation. A great majority of winter-flowering and fine-foliage plants are best struck annually at this season, being most useful in a small state. Most of the plants will require a shift during the month. Shake out *Alocacias*, and repot in an open, porous compost, in freely-drained pots. Examine the state of all plants at the root, and if the soil in any case is found to be sour and inert, it is best to shake the roots clean out of it, repotting in healthy compost in small pots; they will thus soon re-establish themselves, if kept close in a sharp heat. *Palms* should be extensively grown; they are indispensable for every purpose of adornment, so elegant and effective, and so easy of cultivation, being unrivalled as "table plants," and standing in the obscurely-lighted positions in which plants are often placed in house decoration, better than most other subjects, with but little attention. Seeds should now be sown, and young stock kept active. Such fragrant subjects as *Gardenias* and *Tabernæmontanas*, which are invaluable for the production of cut blooms, should, after they have done blooming, especially if large and severely forced, have the balls examined, removing a portion of the soil, shortening the roots, and repotting in a rich fibrous peat with a liberal admixture of sand; they will start vigorously into growth if placed on a bed of tan, in a genial temperature, and freely syringed over-head. When accommodation can be afforded them, they should be planted out for the production of cut-blooms. In potting, let the health and quantity of roots be the guide as to increased size of pot; use soils in a healthy state, and of the best procurable quality, rich in fibre. An increase of temperature and moisture may be given as the days lengthen.

Greenhouse: All young plants should at once receive a shift, as well as many specimen plants that are pot-bound. *Hederomas*, *Leschenaultias*, *Boronias*, *Pimeleas*, and many similar plants, do best in a sound fibrous peat, adding sand to insure porosity; use clean pots, freely drained, and pot firmly. Presuming that the balls were in a healthy state of moisture when potted, they will require but little water for some time at the root, but must have attention in this respect, so that they do not suffer; use the syringe amongst the pots, and keep them moderately close for a time, to encourage growth. *Heaths* that are pot-bound should now receive a shift, the young plants as well as the soft-wooded sorts which bloomed early. Cut over *Epacris* as they go out of bloom, and encourage them to break. Prick off *Cyclamens* that were sown in autumn in rich compost, and place them in a mild heat in a light pit near to the glass; young plants freely grown are the most satisfactory for winter-blooming. *Chrysanthemums* may now be propagated; plant singly in a light rich compost, and place in a gentle heat, but guard against keeping too close to weaken the growths. Young, growing plants of *Fuchsias* must have attention in potting, using fibry loam, and thoroughly rotten manure; pot moderately firm, and water carefully, until they make fresh roots; stake and pinch back the young shoots, so as to regulate the form of the plants. Prune and start into growth a portion of the older plants, and introduce such as are required for bedding-out into heat, so as to produce cuttings.

Orchids: Most of these will now require potting or surface-dressing. The great majority thrive best in a mixture of peat and sphagnum. The moss should be had in a fresh growing state, and only the best fibrous peat used. A slight increase of moisture and temperature should now be given.

Bedding Plants: To be anything like successful with the present style of flower-gardening, forethought and unceasing application are at all times necessary, and more particularly at the present juncture, when the multiplication and preparation of the various subjects applicable to this purpose must be actively undertaken. *Pelargoniums* that were started into growth, as recommended last month, will now root freely; choose the strongest cuttings, and insert them in pots in light sandy soil, water to settle, and plunge the pots in a brisk bottom-heat, when they will quickly root. As a rule, spring propagation is not often resorted to, as regards the general stock of *Pelargoniums*; at the same time, scarce sorts, and the coloured-leaved sorts, when rooted early in the season, and grown vigorously on, form most excellent plants by bedding-out time. *Verbenas*, *Petunias*, *Lobelias*, *Ageratums*, &c., should be introduced into heat, to produce cuttings; and keep *Alternantheras* and *Coleuses* in a sharp growing temperature, so as to further young growth, which makes the best cuttings. *Lobelias* do not come true from seed, and should always be had from cuttings if possible; a few plants now started into growth will produce a quantity by bedding-out time; or seed sown now in heat will by then make famous plants, equal in every respect to those sown in autumn.—GEO. WESTLAND, *Witley Court*.

FRUITS.

Vines: Attend to last month's directions, and as soon as the fruit is set in the *early* house, use the syringe, and keep up a moist atmosphere by frequently damping the floor of the house; commence thinning the berries at an early stage of their growth, and only retain one bunch to each shoot. Increase the temperature in the succession-house as the days lengthen. Pot-vines in fruit should be plunged, if convenient so to do, otherwise stand the pots on rotten manure or turf; supply them well with liquid manure; after the fruit has been thinned,

remove all lateral shoots, and if growing in 11-in. pots reduce the crop to five or six bunches to each plant. The present is a good time to propagate Vines from eyes; cut them about $1\frac{1}{2}$ in. long, place them in small pots, or striking-pans, *bud upwards*, about $\frac{1}{2}$ in. below the surface, and plunge them in a brisk bottom-heat.

Strawberries: See directions for last month, and place those coming into bloom in a situation where they will have the advantage of plenty of air and light; water with liquid manure as soon as the fruit is formed; when at that stage, the pots may be placed in a warmer situation. Bring in a succession of plants twice through the month.

Cherries—Plums: Keep a moist atmosphere till the trees are coming into bloom. The temperature may be raised 5° , but it must be remembered that these fruits will not admit of rapid forcing, and cannot be hurried with any degree of safety till the fruit is stoned; from the time the flowers begin to expand up to that stage too much air cannot well be given.

Peaches—Nectarines: As soon as the fruit in the early house is perfectly set, and has begun to swell off, use the syringe freely; raise the temperature from 5° to 10° and in like proportion through the day, according to the state of the weather; air freely at all times when the weather is favourable. Keep down green-fly by fumigating, and attend to the disbudding; remove or pinch back all strong shoots that are not required to fill space. See previous directions for those not so far advanced.

Figs: If these in pots were started last month, the night temperature should be kept about 60° , keeping a moist atmosphere by syringing, &c. The day temperature may range 10° higher during sunshine. Fig-houses, where the trees are established, and in a good bearing condition, may now be started, at a temperature of 55° ; keep the trees syringed, and well soak the border with liquid manure, if at all dry.

Pines: See previous directions in regard to succession Pines growing in dung-pits. Prepare soil, and keep it moderately dry, to be in readiness for shifting the plants by the end of the month. Keep up a moist heat in the fruiting-house, and a night temperature of about 70° ; see that no plants in fruit suffer from draught; give air every fine day, and close *early* in the afternoon. Plants starting into fruit at the end of the month may be planted out with advantage in ridges on a bed of leaves, which is the best material to form the bed on which they are to be planted, as it will ensure a steady bottom-heat for some months.

Hardy Fruit: We will suppose that during the frosty weather manure was got on the quarters occupied with small fruits, and if so, no time should be lost in open weather in getting it forked in about the trees. New plantations of *Strawberries* may now be made, and those growing thickly together should have the dead leaves cleared away, the beds cleaned from weeds, and dressed over with short rotten manure; this should be done by the end of the month.

Pay attention to previous instructions in regard to pruning, nailing, planting, &c. *Apricots* should be pruned and nailed at once, and the covering material got in readiness to protect the trees when necessary; it will be well to bear in mind that whatever covering is used for protecting the blossoms from frost, it should be so arranged that it may be easily removed in the day-time, otherwise more harm than good will be done by covering.—J. POWELL, *Frogmore*.

VEGETABLES.

It will be well at this time to go over rows of late *Celery*, and to remove all symptoms of decay, adding at the same time, should the mounds around any be thin or shallow, a little more soil, which, whilst it will tend to blanch it the

better, will also aid, according to the bulk of soil, in keeping it from bolting quite so early as it otherwise might do, by keeping it cooler and at a more uniform temperature. Take advantage of the first drying wind, the soil being also moderately dry, to run the hoe freely amongst crops of *Spinach*, *Lettuces*, *Endive*, autumn-sown *Onions*, &c., and drawing a little additional soil up around the stems of spring *Cabbages*, &c. Where ill-success has attended the autumn-sown *Spinach*, advantage should be taken to sow a batch in a warm sunny corner during the month; such a sowing will be likely to prove very useful.

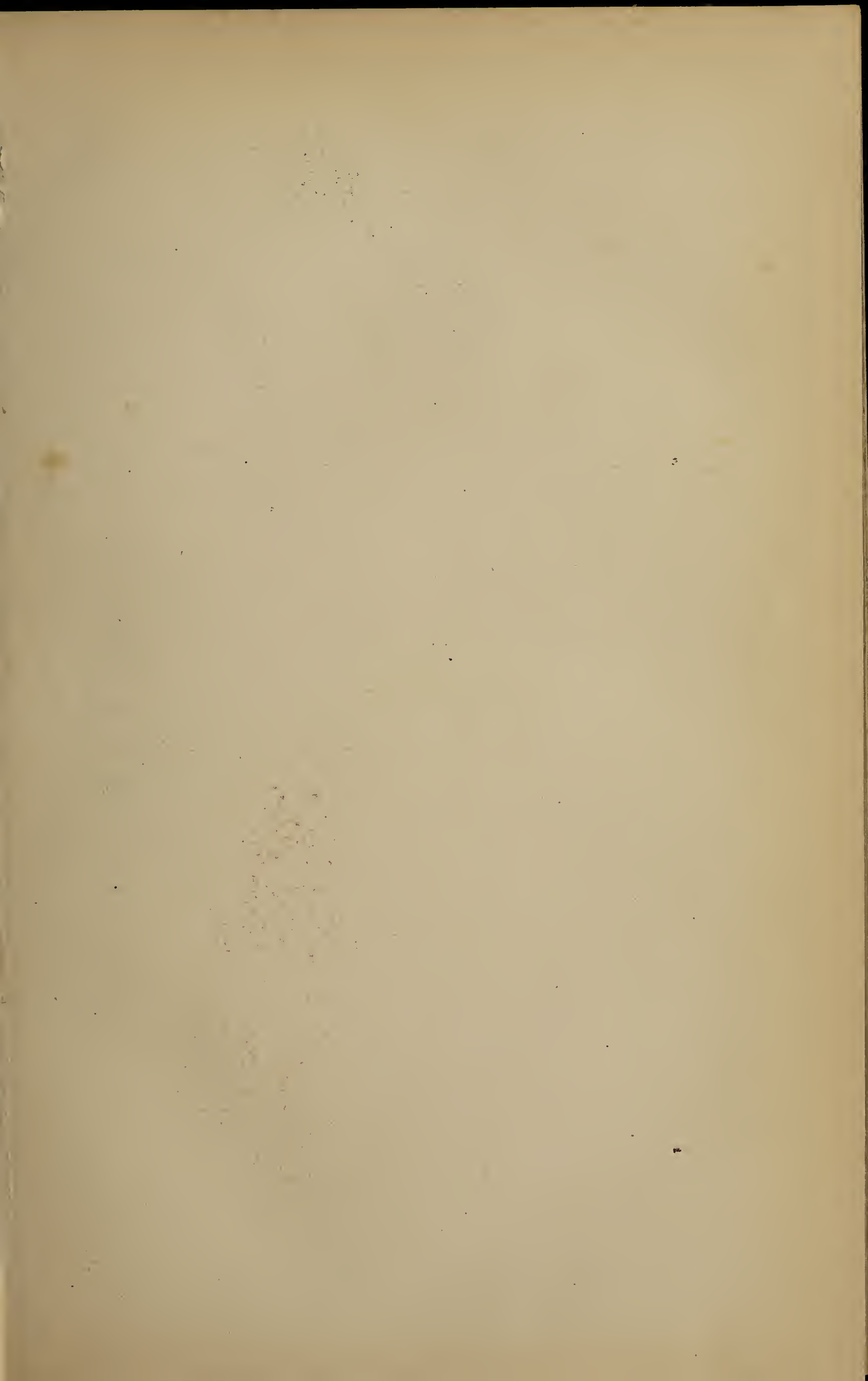
Asparagus-beds should be soiled or "packed up" during dry weather also, in instances where this may not have been done in the autumn, which is a practice too frequently followed, although it is one which, especially in stiff, wet soils, is very likely to cause the roots or "stools" to rot away. All digging and trenching operations should be finished off with the utmost despatch, not alone because the soil will become better settled down, and in a more fitting state to receive the crops intended for each site at an early date, but also—and this is important—with the view of getting as much of the heavy work done as possible.

Where, from any cause, November-sown *Peas* have not succeeded, or these and *Broad Beans* were not sown, sowings of both should now be made. The former might be forwarded a stage by sowing them in boxes or in oblong pieces of turf turned upside down, a drill row being cut along the centre of each, and the seeds fixed firmly therein. Make also early plantings of early *Potatoes* (Ashleaf Kidney) both in a pit or frame, within which a moderate bottom-heat has been engendered by means of fermenting materials, and also upon a sheltered southern border outside. Preparation must be made for early sowings of many kinds of vegetables, including *Carrots* (Early Horn), *Radishes*, *Onions*, *Lettuces*, &c. Successional batches of winter-protected young seedling *Cauliflowers* must be carefully transplanted permanently on to thoroughly enriched quarters in an open sunny situation. Where hand-glasses are at command, it will be well to plant them out under such, placing about five plants under each.

The *Cucumber* and *Melon* frames—where better means do not exist—will have been nicely moulded, and the plants planted, and making a healthy advance; the vines should be pinched back as they near the sides of the frames, and following this, more soil should be added, and every attention given to maintain the heat, by the renewal of the linings, &c. The better way to do this last is to renew one-half at a time, by which means the old lining will be capable of retaining warmth around one part of the bed, whilst the other half renews its fermentation after being disturbed. Those who have not yet commenced should form their beds and procure and sow their seed without delay. Regarding sorts, Munro's Duke of Edinburgh will be found excellent for home use, being a free and quick fruiter, as is the older Telegraph.—WILLIAM EARLEY, *Valentines*.

LATE PEARS.

WE have so many varieties of autumn Pears of such rare excellence, that we have little more to desire in that way, but really good late Pears are a desideratum. The following promise to be valuable late sorts:—*Beurré Six*, *General Duvivier*, *Duc de Morny*, *Bezi Mai*, *Louise Bonne de Printemps*, and *L'Inconnue*. *Beurré Six* is a fine large Pear, in shape something like *Glou Morceau*; the tree is of a free, upright habit of growth. *General Duvivier* is a medium-sized Pear, and keeps well; the tree is of a stiff, upright habit of growth. The *Duc de Morny* is a very fine Pear; the tree being of free





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Souvenir du Congrès Pêar.

growth, the branches rather pendent, and very productive. *Bezi Mai* is a fine Pear, and keeps well; the tree is of a strong habit of growth. *Louise Bonne de Printemps* is a showy, nice Pear of medium size; the tree is of free growth. *L'Inconnue* is rather a small Pear, but promises to keep well, and is a free bearer.

Among Pears better known than the foregoing, *Bellissime d'Hiver* and *Léon Leclerc de Laval* are well worth introducing to every collection; they are both large handsome Pears, and keep well. *Bellissime d'Hiver* forms a stiff, upright tree; *Léon Leclerc de Laval* is of free growth, and very productive. The foregoing all do well as pyramids, and should have a place in every garden.—M. SAUL, *Stourton*.

SOUVENIR DU CONGRÈS PEAR.

WITH AN ILLUSTRATION.

THIS remarkably fine French Pear was raised by M. Morel, and appears to have been a seedling from *Williams's Bon Chrétien*, which it resembles in some respects. The tree makes a fine and prolific pyramid. We have to thank both Mr. Dancer, of Chiswick, and Messrs. Rivers and Son, of Sawbridgeworth, for specimens for figuring, the latter, received after our drawing was completed, being the largest, as well as the best in quality, and measuring about 10 in. in circumference.

The fruit is large, obovate or bluntly oblong-pyriform, with an uneven lumpy or slightly furrowed surface; stalk oblique, stout, set on with scarcely any depression, its base surrounded by a patch of russet; eye small, nearly closed, set in a moderately deep russety hollow; skin clear yellow where shaded, flushed and indistinctly streaked and blotched with bright cherry-red on the exposed side. Flesh white, fine-grained, very juicy and melting, with a brisk vinous flavour and agreeable aroma. The tenderness and juiciness of the flesh are very remarkable, and the fruit is very handsome. Mr. Dancer's fruit, tasted on August 19, was scarcely up to the mark in flavour; and we notice that some of the Continental growers regard it as only second-rate; but a better-ripened sample from Messrs. Rivers, tasted on September 3, proved to be excellent.—T. MOORE.

NEW PEAS.

PRESUMING this to be a suitable time for making a few remarks upon the merits of some of the numerous sorts now in cultivation, I send you these notes by way of helping a beginner in making a selection. There are so many new sorts brought out annually as improvements, and which but very few gardeners know anything about, that the long and swelled-out lists of names are becoming quite perplexing. On the other hand, it cannot be otherwise than troublesome and annoying to seed-producers and to the trade generally, to be obliged to keep in hand sorts which are but little, if at all, wanted; and inasmuch as less than half the number of sorts would serve all ends and purposes, the older and inferior ones might very well be discarded.

The system adopted by the Royal Horticultural Society at Chiswick is excellent, so far as regards proving the quality of the varieties, and their season of arriving at a stage for table use. But some further knowledge is required to satisfy all the wants of cultivators, especially as to what sorts suit best for successive sowings to keep up a supply for table through the summer and autumnal months. There are some sorts, such as *Champion of England*, which, having a strong constitution, are enabled to grow on through dry periods, and overcome attacks of mildew better than others; and these are consequently best suited for, and most profitable as a general crop. Indeed, I have found that by keeping principally to one or two good standard sorts, and sowing successions regularly, a better supply is kept up through the season, and one more easily managed, than can be obtained by sowing a number of sorts—which plan frequently results in having an overplus at one time, followed by a blank.

Amongst the newest sorts I have tested I consider *Omega* to stand in the front rank. It has a very robust habit of growth, producing a stem nearly as thick as the stalk of a broad-bean; it boils of a dark-green colour, and has a fine flavour. I have grown it for two seasons, and find it stands dry periods well; its lateness also makes it an acquisition. *G. F. Wilson* is also a fine marrow-flavoured Pea, and is very prolific, but it does not stand drought so well as the former. *Popular* is another sort I think highly of as a second early; it is an abundant bearer, with the pods regular and well filled. *Fillbasket* is also a first-class Pea here, producing large pods well filled, and it has also a fine flavour. *William I.* is a good early sort. *Superlative* I discarded after the first season's trial; it is poor in flavour, and ought never to have received a Certificate of Merit. The *Cook's Favourite* is not much better. *Macleane's Prince of Wales* is a good sort for autumn use, and so is *Princess Royal*; both boil green, and are of good flavour. *Veitch's Perfection* is an excellent sort, but it does not fill well in wet periods, or towards autumn, when the weather becomes cold. One of the best sorts is the *British Queen*, but its great height, and the space required to grow it well, are drawbacks in the way of its general cultivation.—J. WEBSTER, *Gordon Castle*.

SEASONABLE NOTES ON FLORISTS' FLOWERS.

FIRST and foremost comes the *Auricula*, which, I believe, is looked upon as the queen of the whole tribe of florists' flowers. I need not dwell on its merits, as these are as well known to other growers as to me, but it is not every one who has had so many years' experience in its cultivation as I have. At eleven years of age (which was in the year 1814—that long winter) I was an *Auricula*-grower; in 1817, I was a *Tulip*-grower; and in 1820, I became a *Carnation* and *Picotee*-grower. Of my exhibiting and the successes attending thereon, in those earlier days, I may have something to say on another occasion. What I now propose to do is to offer some advice to those who may have lately taken up the fancy.

If I am correctly informed, many of the older growers who had left off

cultivating the *Auricula* and taken to other fancies in plant-growing, are now declining the cultivation of the latter, and going back to their former hobby. Not only have these old hands returned, but a goodly number of young recruits have joined the ranks, and the advice I have to give will be more for the instruction of the young beginners, than for the benefit of those of the older school who may well consider themselves equally competent with an old fancier like me.

My own practice, even from my younger days, has been to adhere to certain rules. About the last week in January, or not later than the first week in February, *weather permitting*, I commence stripping off all the outer dead and decayed leaves from the *Auricula* plants; that done, I take a wooden skewer and run it round the inside of the brim of the pot to the depth of about an inch in the mould; then, holding the pot a little on the slope, I knock the pot slightly with the other hand till all the old and loose mould has fallen off, and the uppermost fibrous roots become visible. I then fill up the pots to within a quarter of an inch of the top with rather new fresh compost. That done, the plants are placed in the frames again, the lights put on and kept on for a fortnight, and the glass covered with mats at night; whether there is any probability of frost or not, I never forget to put on the mats, but unless the frost is keen, I take them off at daybreak in the morning, so as to allow the plants all the light possible. I continue this treatment until about the middle of the month, when, should the weather prove somewhat mild and showery, I take off the lights, and let the plants have a moderate soaking. If the weather is cold and frosty about that time, I drive off watering for a few days longer; but if the weather is then fine, and no rain appears, I take the water-pot, put on as fine a rose as possible, and give a gentle watering over the whole of the plants, twice or thrice, using pure soft water; rain-water is the best, if it is clean, and not too stale.

After this soaking, whether by rain or from the water-pot, I let the lights remain off, if fine, till the plants have got a little dry, but take care to put them on again in the early part of the afternoon. Above all, it is important not to forget the mats at night—I may say from this time up to the blooming season. At the same time, I strongly recommend the mats being taken off every morning at daybreak, and when the weather is at all mild and fine, I particularly recommend that the lights also should be taken off during day-time, so as to allow the plants all the sun and air possible, and which they delight in all the year round.

There is one little matter I may mention, in case any new beginners should be anxious about getting up a collection of plants off-hand, as it were. It would perhaps at this season of the year be best to purchase and bring home their plants in the pots; at all events, it would be best to do so if the purchaser has not got suitable compost in store. I may, however, mention a circumstance which occurred once in my practice a good many years since. I purchased a plant of *Booth's Freedom* at Middleton, in Lancashire, on New Year's Day. I took it out of the pot there, shook all the mould clean away from the roots, brought it home, and potted it in

some fresh stuff, placed it in the frame along with the blooming plants I was then growing for show, and not a single plant in my collection grew better or bloomed as well. Never before or since have I seen seven pips on one stem to equal them ; they were uncommonly large, with dense black body-colour, and a broad dark holly-green edge, and the tube and eye were more nearly circular than I have since seen in the same variety. Since that time I have never been particular about what time of the year I made purchases of Auricula plants ; and I don't suppose that many growers have been much more fortunate in their cultivation and exhibition of them than I have been, for the last half-century or more. Neither has any man ever had a greater liking for them than I have had ; they exercised a charm over me when a boy, and they are likely to continue to do so till my grey hairs are laid low.

I greatly admire the *Tulip*, the *Pink*, the *Carnation*, and the *Picotee*, and have spent much time and labour in the raising of seedlings of all these different objects ; I have also been somewhat fortunate in raising novelties that have surpassed some of the older favourites. I have lived to see wonderful improvements in all the different florists' flowers, though certainly in some of them more than in others ; of the *Tulip*, for instance, what grand varieties we now possess, as compared with the time one can recollect, when we had nothing but Dutch flowers on which to exercise our cultural skill, whereas, in these days, we have English-raised sorts which throw all the finest Dutch flowers utterly into the shade.

Next, I think, *Picotees* come the nearest up to the mark. I never expected to live to see the improvement which has been effected in them within the last forty, or thirty, or even twenty years. During the last thirty years I do not see that we have made much improvement in *Carnations*. In *Pinks* we have had some good additions. The *Polyanthus* seems to have been neglected for some years, and in consequence, we do not see the improvements in it which we might have looked for, providing it had been better cared for ; but as the fancy for Auriculas is now again becoming popular, it is not unlikely that the beautiful *Polyanthus* will also be taken up and improved, which I should much like to see.

There is another subject, namely the *Sweet William*, which I think ought to be admitted as a florists' flower, now that we have got it in such an improved state. This improvement was mainly brought about by an ardent florist, Mr. Hunt, of High Wycombe, who, I believe, spent years of labour before he got it up to the mark he had set his mind on, and before he sent out any of the seeds. Since his day, others who took up the fancy have still further improved the flowers, till now we might almost consider them perfection. I myself grow a bed of them of the same breadth and length as my numerous Tulip beds, which are 102 ft. in length and 4 ft. wide ; they just come into flower at the full of the Tulip bloom, and all who come to see them declare that they are grander than any of the beds of Tulips. They have another merit, that of standing much longer in bloom than the Tulip or any other florists' flower. From the time I first began to cultivate them, 14 years ago, I have ever been particular about taking seeds from the

very choicest varieties ; but, like most other kinds of flowers, they will in some measure degenerate, though the worst that come from such selected seeds are pretty, and do well for nosegays. I have at present by me a moderate quantity of seeds taken last year and the year previous, and if any florist friend would like to try to cultivate them, and will forward to me a stamped envelope,



AURICULA-EYED SWEET WILLIAM.*

addressed, "John Hepworth, Florist, Crosland Moor, Huddersfield," I will with pleasure send them a few seeds.

In these rambling remarks I have run away from the subject with which I commenced ; however, I hope to be excused, and may revert to the Auricula on a future occasion, and give a note of my practice for all the year round.—J. HEPWORTH, *Huddersfield*.

* This is described by Messrs. Carter and Co., to whom we are indebted for the woodcut, as ranging in colour from bright purple-crimson to pure white, the edges of the flower being without the least serration, and the eyes clearly defined. It appears to be a very fine strain.

THE NEW FRUITS OF 1874.

IN the Fruit department the acquisitions during the past year have not been so abundant as usual. The season, although extremely trying during the early part to the fruit cultivator, was not, on the whole, an unkindly one for fruits in general; and, but for the frosts in May, the crop of fruit everywhere would have been excessive, and as a consequence, helped by the succeeding dry summer, very inferior. The crop of Plums was perhaps more affected by the cold spring than that of any other fruit, while that of Strawberries suffered from the excessive drought; there were, indeed, excepting in such favoured spots as the county of Kent, scarcely any good Strawberries last year. We have, therefore, no new varieties of this most popular fruit to call attention to, but we would just remark, as a noteworthy fact, that the winning *Strawberry* of the past season was *Sir Joseph Paxton*; its great size and beauty made it conquer at almost every exhibition.

In *Apples*, the number of new seedling varieties submitted for public opinion has been unusually great. There has not, however, been any of very startling merit. The variety amongst Apples is now so great, and the quality so good, that it is extremely difficult to secure any advance. We must here note, if not as a novelty, yet as being a very important addition to our pomological knowledge, the fruiting, or at least the observation of the fruiting, for the first time, in the gardens of the Royal Horticultural Society at Chiswick, of the true *Pommier du Paradis* (the French Paradise Apple). This is the stock so much used in France as a dwarfing stock for Apples, and about which there has been so much controversy in this country during the past few years. The fruit is of medium size, pale yellow, with a flush of light rose on the exposed side, and would pass muster very well in a basket of Keswick or Manks Codlin. It ripens early in August, and is then of very good quality; so that not alone is it valuable as a stock, but it is also worthy of cultivation as a useful fruit on its own account. It may be described as precocious in every sense of the word. It flowers and fruits at a very early stage, and induces the same habit in any variety grafted upon it. It blossoms early in the season, which is rather a demerit, and is one of the earliest sorts to ripen. [Of this we shall publish a coloured figure shortly.]

Of *Pears* we have not many to notice, yet there is one of sterling merit—*Lucy Grieve*, an English seedling, raised by Mr. Grieve, of Culford Hall; it is not unlike a small Glou Morceau, and is of equally good quality; [this we shall also figure shortly]. The following, although not exactly new, have yet stood so prominently forward this season as worthy of extensive cultivation that we think well to mention them, viz., *Pitmaston Duchesse d'Angoulême* [which we shall also figure], *Beurré de l'Assomption*, and *Souvenir du Congrès* [see p. 37]. We must not forget to mention the *Pyrus Maulei*, the fruit of which we were introduced to for the first time last season. It is a sort of Quince, the ripened fruits of which make an excellent marmalade. It is doubtful, however, whether it will be most appreciated as a useful fruit or as an ornamental plant.

Amongst *Melons* we had many claimants, and size actually carried the day, for the biggest Melon we have ever seen was the most remarkable, and was certainly not the worst in quality. To Mr. Groom, of Stradbroke Hall, Suffolk, we are indebted for this monster melon, which was no less than 18 in. in length. It is stated to be of African origin, and is worthy of preservation for hybridising purposes. For another novelty in the fruit line, the *Musa Champa*, a variety of *M. paradisiaca*, from Trinidad, we have to thank Mr. Woodbridge, of Syon House; this is a very free-fruited sort, considered of superior flavour to *M. Cavendishii*.

Lastly, we come to by far the most important introductions of the year, *Grapes*; and again we have to thank Mr. Pearson—now for his splendid new Grape, *Mrs. Pearson*, a delicious novelty which is of the same origin as Golden Queen, noticed last year; it is a seedling from the Alicante, crossed with Ferdinand de Lesseps, and partakes a good deal of the peculiar Strawberry-like flavour of that variety. The bunches are large; berries of medium size, roundish-oval, of a fine amber colour; the flesh firm, juicy, and exceedingly rich. This may be noted as one of the finest white Grapes yet introduced. It has not only been awarded a First-class Certificate, but received Mr. Smee's prize as the best new fruit of the year. Another newish Grape of considerable excellence, which, although it has been already noticed, we again advert to as coming this season more especially before the public, is *Venn's Seedling Black Muscat*. This is of the character of the well-known Muscat Hamburgh, and is stated to inherit all its good qualities without any of its defects.—*Abridged from the Gardeners' Chronicle*.

THE EFFECTS OF THE LATE STORM.

DOUBTLESS many of your readers will know by this time what injury has been sustained, in consequence of the late frost, by the more tender things in frames and cold pits. Many of ours were covered up for more than three weeks, and yet, with the exception of a few broken pots amongst the *Strawberries*, there seems little injury done. *Carnations*, *Mignonette*, *Calceolarias*, and such like things, look as fresh as before the storm. Of course they were allowed to thaw thoroughly before the covering was taken off. Fortunately we had a good covering of snow (about eight inches or nine inches deep in this part), one of the best protectors from frost. I fear the injury amongst hardier subjects will be less perceptible at present. The cold weather, from November 10, had completely brought vegetation to a stand-still, and prepared it in some measure to withstand such a frost. The lowest reading of the thermometer at Studley was 3° on the night of December the 31st, it was as low as 4° on the night of the 28th, while only a few miles from here—namely, at Azerley Hall and Newby Hall—I hear it fell to 4° below zero. There may, however, be a difference in the position and exposure, as well as variation in the instruments. Mine was fully exposed at about three feet from the ground, but might derive a little protection from buildings on the north side. I have generally found 28° or 30° of frost kill, or greatly injure, our *Pampas Grass*; but of late years, on the

approach of winter, I have been in the habit of tying up the grass in a cone round the flower-stems, and covering-up the roots with dry mushroom-dung from the beds, and in this way they have wintered safely. This year I put a mat in addition round my best specimens, which all look well at the present time.

Amongst Vegetables, I do not think we have suffered so severely among the *Broccolis* as often happens. Up to the present time, a batch of *Osborn's* on a north border looks as fresh as before the frost; the taller ones are, of course, injured the most, but the greater part of these will stand, unless we get more severe frosts. We were fortunate in taking in a good batch of *Walcheren Cauliflower* the day before the snow fell, and though we have been cutting every day since the storm began, we have still (January 11) a few heads left.—JOHN CLARK, *Studley Royal*.



NEW PEAR-SHAPED MELON.

IF the novelty represented by the annexed woodcut, it may at least be said that the fruits would form ornamental objects on the dessert-table. It is in the hands of the Messrs. Sutton and Sons, and is described by them as a distinct and unique variety, which will become a great favourite on account of its good quality and its beauty. The leaves are smaller than those of other Melons, and it bears abundantly, the fruit varying somewhat in form,

but generally coming pyriform. When ripe, it is of a bright yellow, striped with orange, and occasionally having streaks of scarlet. It is, therefore, highly ornamental, and it is said to be of good flavour. The colouring indicates that its parentage may, in part at least, be referred to Queen Ann's Pocket Melon. Mr. Ingram, of Alnwick Gardens, speaks of it as a fine-looking Melon, about 3 lb. in weight, and an excellent cropper.—T. M.

GARDEN GOSSIP.

AMONGST the *Special Exhibitions* of the ensuing year, Messrs. George Jackman and Son will make a grand display of the *Spring-flowering Clematis* in the corridor attached to the Conservatory of the Royal Botanic Society, Regent's Park; the exhibition is to continue open from May 1 to May 24.—Mr. Wm. Paul's great show of *Roses in pots*, *Pictorial Trees*, *Pelargoniums*, &c., will also be held in the Royal Botanic Society's Gardens from May 3 to May 10, inclusive; and Mr. Paul's *Spring Show* will take place at South Kensington, and will extend from March 27 to April 3.—Mr. W. Bull's six *Silver Cups for New Plants* of his own introduction are offered for competition at the June Show (2nd) of the Royal Horticultural Society at South Kensington.—The *Carter Cup*, and other prizes originally offered by Messrs. Carter and Co., for competition at the Royal Horticultural Society's Provincial Show, will now, by permission of the Council, be competed for at South Kensington on July 7.—Messrs. Veitch and Son's *Fruit Prizes* for 1875 are also to be competed for at South Kensington on July 21.—Messrs. Sutton and Sons and Messrs. Hurst and Sons also offer various prizes, at different dates, for vegetables chiefly.—The Pelargonium Society, as already announced, offer special prizes for *Pelargoniums* at the Zonal Pelargonium Show at South Kensington on July 21.—Finally, the Royal Caledonian Horticultural Society will hold a *Special Fruit Show* in Edinburgh on September 15, 16.—The great Country Shows are fixed as follows:—Manchester, May 14 to 21; Glasgow and West of Scotland, June 18; Royal Horticultural Society of Ireland, June 24.

— **A**NOTHER batch of Mr. Laxton's *Peas* is this season being sent out to be submitted to the ordeal of general cultivation. Their high quality has been sufficiently attested under experimental treatment, but the exact niche they will each fill in the estimation of gardeners generally, has yet to be decided by the more extended trials they will get now that they are in the hands of the public. *Supplanter*, of which a figure is annexed, a cross between Veitch's Perfection and Little Gem, is a very promising sort, being both handsome and prolific. The others now sent out are *Unique*, *Dr. Hogg*, and *Connoisseur*.

— **T**HE *Winter-flowering Bouvardias* are especially valuable as pot-plants for decorative purposes, and also for bouquet-making. At Ascot, Mr. Standish grows them in very large numbers. Two houses, 80 ft. long, are filled with them. In the one house the free-flowering *B. Vreelandii*, *B. jasminiflora*, and *B. Humboldtii corymbiflora* are grown. Taking it altogether, this last is no doubt the finest variety in cultivation; it is an excellent grower, deliciously scented, and a continuous bloomer;



SUPPLANTER PEA.

the flowers are as large as those of the old *Humboldtii*, and produced in bunches of a dozen. The individual blooms are 3 in. long in the tube; they are used singly, to stand above and relieve the even surface of bouquets, and for this purpose a thin wire is pushed up the inside of the tube, and the stalk of the flower fastened to it; this is to keep them in position, and to prevent their falling over. In this house over 2,000 plants in fine health, are grown. They are kept near the glass, and moderate stove-heat used all through the winter, without which they do not bloom freely. The adjoining house, also filled with *Bouvardias*, contains many of the American pink variety, named *Bride*. The above four sorts are the best in cultivation, and where fragrant flowers are continuously in demand, they are indispensable.

— IN the *Gardeners' Chronicle*, Colonel Trevor Clarke gives the history of *Colonel Clarke's Celery*, which is found to be quite synonymous with the Leicester Red. "Its true history is this:—It is not a production of mine at all, but was selected more than twenty years ago, a distinct sport from some red Celery, by my gardener, who brought the seed of it to Welton with him when he took the situation. It is really a red Celery as far as the coloration of the outer leaf-stem goes, but when prepared for the table appears white, with the exception of a clear red spot at the base of the leaf-stalks, the said spot disappearing in the innermost ones. Ever since we have had it we have, for curiosity, tried some other sort against it yearly, and have found it appreciably better than any we have yet met with. I have allowed Mr. Collins to grow a batch of it for Messrs. Veitch yearly, and if any doubt exists on the subject, I recommend the trial of Messrs. Veitch's seed, which will be found undoubtedly pure. It is a small, neat, solid sort, not fit for exhibition purposes, but of undeniable excellence for eating."

— It has been announced that Mr. H. G. Quilter proposes to hold, in the Lower Grounds at Aston, a series of *Annual Flower Shows for the Benefit of Public Institutions in Birmingham*, taking upon himself the risk of such exhibitions, and sharing the profits with the selected institutions, after the expenses are paid. The exhibition of 1875 will be for the benefit of the Birmingham Institute, that of 1876 for the Sanatorium, that of 1877 for the School of Art, leave being reserved for the Queen's Hospital to take 1878. Mr. Quilter very properly stipulates for the aid of a general committee formed from the committees of these institutions, with the addition of other gentlemen who may be disposed to assist. The exhibition of this year, for the benefit of the Midland Institute Building Fund, will open on Thursday, July 1, and be continued on the Friday, Saturday, and Monday following.

— THE new hybrid *Amaranthus Henderi*, raised by Messrs. Hender and Son, of Plymouth, is, if we may judge from the samples shown in London, of considerable decorative value. It varies in leafage, in habit, and in colour. Well-grown plants are pyramidal, 3 ft. to 5 ft. high, with from thirty to forty side-shoots. When young, the colours of the leaves are brown-madder and bronze, each plant at length assuming its distinctive hues. This new *Amaranthus* is said to be the result of a cross between *A. elegantissimus*, *A. tricolor*, and *A. salicifolius*. The colours of the leaves of different plants were described as follows by an artist:—*Monocolors*: Deep carmine, lake, purple-madder, light carmine, yellowish-carmine, vermilion, rose-madder; *Bicolors*: Orange splashed with carmine, madder and sage-green, carmine and orange, carmine and russet, lemon splashed with carmine, chrome-yellow striped with carmine; *Tricolors*: Orange carmine and green, rose-madder and aureoline running into olive-green, carmine madder and sage-green.

— THE Lilies are just now in high favour. Mr. Elwes proposes to publish a *Monograph of the genus Lilium*, with illustrations by Fitch, and with the specimens and notes of Messrs. Wilson, Max Leichtlin, and Baker at his disposal. A splendid series of oil paintings in the possession of Mr. Leichtlin will serve to illustrate those few species which it is impossible to obtain in a living state. The plates will be folio size, uniform with Bateman's *Odontoglossums*, will be coloured by hand in the best style, and accompanied by a complete account of the native countries, culture, varieties, and history of all known Lilies. The work will be issued in parts containing eight plates each, at the price of one guinea per part, and is expected to be completed in six parts, unless new Lilies are discovered. Subscribers' names should be sent to H. J. Elwes, Esq., 6 Tenterden Street, Hanover Square, London.

— THOSE who are interested in *Drying Plants for the Herbarium*, will be glad to know, if they do not know already, that *Newman's Botanical Drying Paper*, which is manufactured expressly for this purpose, possesses all the qualities required in such paper, preserving form and colour in the best possible manner, and having the peculiar advantage of seldom requiring a change of sheets whilst the plants are being dried, thus effecting a great saving of time and trouble. We have used it ourselves with much advantage.

— THE *Royal Aquarium and Winter Garden Company* is formed to establish in the neighbourhood of Westminster Abbey an Aquarium and Winter Garden, on a very magnificent scale. Plans have been approved, and contracts entered into, so that we may soon expect to have in the midst of London a fairyland of tropical foliage and flowers, fountains and statuary, sea caves and creatures of the deep. In the structure of the roof, which is to be circular, it is intended to adopt Rendle's system of glazing, by which the use of putty is entirely dispensed with, and a broken pane of glass may be replaced by merely slipping it into a groove. The huge conservatory will afford space for flower and fruit shows, *fêtes*, &c.

— THE Messrs. Sutton and Sons have issued a *Miniature Amateur's Guide*, being a much reduced reproduction of their Spring Catalogue for 1875, by the aid of photography. It is quite a curiosity in its way, and as the catalogue itself is one of the most complete and tasteful of those published in this country, this pocket edition ($4\frac{1}{2}$ in. by $3\frac{1}{2}$ in.) is well worth procuring, by those who can read very small print.

— AT the meeting of the Royal Horticultural Society's Scientific Committee on the 20th ult., Mr. Alfred Smee exhibited *Chestnuts of the growth of 1873*, which had been preserved, quite plump and fresh, simply by placing them in dry sand in a flower-pot which stood in a dry garden-shed. On cutting them open the embryo was found to be in a good condition. This supplies a valuable hint to those concerned in sending Chestnuts to India.

— ACCORDING to the *Revue Horticole*, a plan of *Destroying the Phylloxera* has been devised by M. Denis, of Lyons. In the winter, when there are no herbaceous growths, the base of the Vine stem is laid bare to a depth of 10 in. to 12 in., and boiling water, mixed with a small proportion of tobacco-juice, poured into the hole round the stock. Farm-yard manure, or by preference sheep-dung, is then added, and the soil returned to its place.

— THE *Bulletin of the Central Horticultural Society of France* reports, on the authority of M. Boisduval, that the *Potatos in Algeria* have been very severely injured by the larva of a Tineinous moth belonging to the genus *Bryotropha*, and called *B. solanella*. The insect deposits its eggs on the young shoots of the Potato, and the caterpillars, scarcely thicker than a hair, penetrate into the tuber, which they tunnel in all directions. No remedy is at present known for the ravages of this new pest.

— A *Testimonial to Mr. E. R. Cutler*, Secretary to the Gardeners' Royal Benevolent Institution, was presented to that gentleman on the 14th ult., at Simpson's Tavern, Strand. The sum subscribed was £250, and the testimonial took the form of a silver tea and coffee service, with salver, table forks and spoons, a massive gold watch-chain, and a diamond half-hoop ring and gold watch-chain for Mrs. Cutler.

— SOME splendid specimens of *Irish Yews* are growing in the pleasure-grounds at Ingestrie Hall, near Stafford; they are at least 20 ft. high, and as much through, and form quite a feature amongst the other fine specimens of arboreal vegetation with which this antique residence is embellished.

— IN the account of the *Vine Sport* at p. 4, the name of *Golden Champion* should be substituted for that of *Golden Hamburgh*.

Obituary.

— **MR. JOHN GIBSON** died at his residence, Argyll Lodge, South Kensington, on January 11, in his 60th year. Mr. Gibson commenced his career, under his father, at Eaton Hall, near Congleton, and was in 1832 apprenticed to Mr. (afterwards Sir Joseph) Paxton, at Chatsworth. He was sent in 1835 by the late Duke of Devonshire to India, for the purpose of collecting plants, notably the *Amherstia nobilis*, from which journey he returned in 1837, and was then made foreman of the exotic plant department at Chatsworth. In 1849, he was appointed superintendent of Victoria Park, then in course of formation, the charge of Greenwich Park being also made over to him two or three years after. In 1855, he commenced laying out Battersea Park, removing there altogether in 1859, and remaining till 1871, when he was appointed to the charge of Hyde Park, with the Green Park, St. James's Park, and Kensington Gardens. Here a severe attack of paralysis in 1873 incapacitated him and led to his resignation last autumn, when his son, who had been acting for him, was appointed his successor. To Mr. Gibson we are indebted for the great improvement in our gardens resulting from the introduction of subtropical plants; while his works will form a lasting memorial of his talent as a landscape artist, and his memory as a friend will be cherished by all who knew him.

— **GENERAL VON JACOBI** died early in November last. He was best known in England as an amateur botanist and horticulturist, devoting his leisure time to botanical pursuits out of pure love for the beauties of Nature. Agaves and other succulent plants were his favourites, and of these he published a garden catalogue or monograph in some of the German periodicals. There is little doubt that he possessed a far more extensive practical knowledge of these plants than any living botanist.

— **M. COURTOIS-GÉRARD** died on December 31. His treatise on market-gardening is a model of its kind, and his attainments and character entitled him to a high place among horticulturists.

— **MR. WILLIAM P. AYRES** died, after a lengthened illness, at Carisbrook Villa, Forest Hill, on January 14, aged 59. He was educated as a gardener in the Horticultural Society's garden at Chiswick. About 1844-6, when gardener to James Cook, Esq., of Blackheath, he displayed considerable ability as a cultivator of hard-wooded show plants and Fancy Pelargoniums. He afterwards became a nurseryman and florist at the same place, and was very successful as a raiser of new Fancy Pelargoniums, being, indeed, one of the first to give a decided impulse to the improvement of that flower. After filling various positions in different parts of the country, he settled at Nottingham, and was partly engaged as editor of the horticultural portion of the *Nottingham Guardian*. While there he brought out his patent imperishable hothouses. Mr. Ayres was a clever horticultural writer, and was the author of a treatise on the *Cultivation of the Cucumber*, and Co-editor of the *Gardeners' Magazine of Botany*.

— **MR. WILBRAHAM BUCKLEY**, of Tooting, died, after a long and painful affliction, on January 18. For at least a quarter of a century, he occupied a confidential position in the nursery of the Messrs. Rollisson, where he remained till within a very short period of his becoming incapacitated by an attack of paralysis, which has, after some twelve or fifteen months, terminated fatally. Mr. Buckley was a most worthy and estimable man, with a knowledge of garden plants equalled by very few men of the present day. He was the author of a series of papers on "Aquatics" published in our pages.

— **MR. ARCHIBALD TURNBULL**, of the firm of Dickson and Turnbull, nurserymen, Perth, died on January 19, aged 85. Mr. Turnbull, who was born in Roxburghshire, joined his uncle, Mr. William Dickson, in the nursery and seed business, which has now been carried on under their joint names for nearly half a century. On the death of his uncle in 1835, he succeeded to his property at Bellwood. As one of the original promoters of the Perthshire Horticultural Society, he took great interest in its prosperity; and by his death, which resulted from a severe attack of bronchitis, the local institutions of Perth have lost a warm and generous friend.





W H Fitch del.

Cydonia Maulei.

Chromo. G. Severeyns Brussels.

CYDONIA MAULEI.

WITH AN ILLUSTRATION.

NDER the name of *Pyrus Maulei*, this fine hardy deciduous shrub has been described by Dr. Masters, (*Gard. Chron.* 1874, i., 757 ; ii., 740), from specimens communicated by its introducers, Messrs. Maule and Sons, of Bristol, to whom we also are indebted for the examples represented in the accompanying plate. It is a native of Japan, and was first publicly made known by Messrs. Maule, on the occasion of the visit of the Royal Horticultural Society to Bath, in June, 1873, when a drawing of the plant, with samples of the conserve made from its fruit, was shown under the name of a Japanese species of *Cratægus* or *Pyrus*, and received a First-class Certificate. Subsequently, in May, 1874, examples of the plant in the flowering stage were sent to the *Gardeners' Chronicle* for description, and to our artist for illustration, and in October last, abundant samples of the ripe fruit were exhibited at South Kensington by Messrs. Maule.

Cydonia Maulei may be described as a moderate-sized shrub, with spreading, cylindrical, brownish-barked branches, often ending in a sharp spine, the bark being thickly studded with small lenticels. The leaves are subcoriaceous, glabrous, crenate, spathulate, tapering at the base into a short, channeled, narrowly-winged petiole, which is furnished with minute deciduous stipules. The flowers are sessile, or very shortly stalked, in dense axillary fascicles, each $1\frac{1}{2}$ in. or more in diameter ; the flower-tube is funnel-shaped, glabrous ; the calyx-lobes are rounded and ciliate at the edges ; the petals are orange-red, spreading, boat-shaped, oblong-spathulate, obtuse, tapering at the base into a short claw ; the stamens number about twenty, with glabrous filaments ; and the styles are one-fourth longer than the stamens, glabrous, inseparate below, but dividing at about half their length into five linear branches, each terminated by a capitate stigma. The yellow fruit is roundish, slightly depressed both at the eye and stalk, and bluntly but indistinctly ribbed, while the five-celled interior contains numerous seeds or pips.

The affinity of this charming plant is obviously with *Cydonia japonica*, the Japan Quince, one of the most ornamental of flowering shrubs, but it differs from that well-known species in the form of its leaves, and in the structure of its flowers and fruits. Mr. Maule informs us that it will not take when grafted on the pear, but will do so on the apple, and also on the thorn.

As a hardy ornamental deciduous flowering shrub, this plant has few equals, its brightly-coloured flowers being so abundant and so remarkably effective. They are freely produced early in May, and as we learn from Mr. Maule, the plants go on blooming without intermission till June, so that in the event of frosty weather, there is always a succession of blossoms some of which must escape injury. Hence being developed later in the season than those of *Cydonia japonica*, they are much less liable to suffer from spring frosts, and this circumstance not only ensures their longer continuance in beauty as objects of ornament, but is also more favourable to the production of a crop of fruit. This fruit, as

will be seen from our figure, is of quite an ornamental character, being of a bright pale yellow colour, here and there streaked or dotted with red; it is, moreover, very abundantly produced. The raw fruit has a sharp acid austere taste, and will require considerable amelioration if it is ever to be introduced, as it was hoped it might be, to the dessert-table; but as a culinary fruit it is a desirable novelty, as when made into a preserve it becomes agreeable and piquant, and quite distinct in flavour from that of the common Quince.—T. MOORE.

THE CULTURE OF WALL-FRUITS.

CHAPTER II.—SOIL.

IN future papers I hope to enlarge upon the practical details of the methods by which we are enabled to avail ourselves of the knowledge of the first principles alluded to at p. 25. At present there are other portions of my subject claiming attention, and amongst them is another first principle to be studied—that of the nature and condition of the soil. Without attention to this as a primary agent, the most perfect knowledge of the principles already discussed will be comparatively useless, as it is through the medium of the soil that we must, in a great measure, look for success in all other manipulations.

In submitting a young tree to artificial treatment, our object is supposed to be to obtain in a comparatively short time, by means of that treatment, all the advantages which would follow, after the lapse of many years, from a tree favourably situated, and left to Nature's own pruning. We cannot, therefore, ignore Nature's teaching, but must regulate our operations by the natural tendencies of the trees, so as not to do too much violence to them, or otherwise we may defeat our own ends. To follow this out in practice, I consider the purity of the soil—that is, its freedom from all stimulating ingredients, as of paramount importance, in the early stages of the life of the tree.

A vigorous young maiden tree, well rooted, will find in pure virgin soil, well selected, sufficient pabulum or food to enable it to throw out a firm, healthy, and fruitful growth for some years. Any admixture of stimulating ingredients is therefore injudicious, being certain to produce a soft-wooded, pithy, and unfruitful habit of growth, quite unsuited to be made the foundation upon which to build up, in the future, a healthy, firm-wooded, fruitful tree, and indeed very often necessitating a fresh start altogether.

Now it is in these two distinct characteristics of growth—firm, not too large, but clean and fruitful wood, and coarsely-grown, soft, and unfruitful wood—that we find the very conditions which influence success; and it is by avoiding the latter, and securing the former, that a safe foundation is laid. This should always be borne in mind by young gardeners who are called upon to make new plantations of fruit-trees. As a rule, and if time is no object, it is best to start with maiden trees, but occasions may arise in which it may be desirable to plant trees in a more advanced stage of growth; and here a knowledge of the above distinctions will be of value in enabling the purchaser to select trees furnished with

small fruitful wood, in preference to those which are larger, more showy-looking, and more freely-grown.

All the above conditions are influenced by the soil in which the trees are planted, and must be taken into consideration when forming composts for making up fruit-borders. I shall have occasion to enter more at large on soils and composts as my subject advances. At present I merely wish to set out as a first principle that a pure and well-selected virgin soil, unmixed with stimulating manures, is most likely to influence favourably the after-cultivation of the trees. Circumstances, however, may not always be favourable for obtaining a sound and good virgin soil. In such cases a compost must be resorted to, and I do not object to the admixture with such soil as can be procured, of substances which decompose slowly, such as burned clay, charcoal or charred refuse, and a few broken bones, none of which act as immediate stimulants like ordinary manures, and therefore do not contribute to the production of an over-luxuriant growth of wood.

I have hitherto remarked upon the soil as the medium through which we endeavour to influence the growth of the tree, but it has also an equal, if not superior influence upon the roots; and here we find, at the outset, strong evidence in favour of the principle above laid down, as to its purity and freedom from stimulating matter. A well-rooted young tree may be defined as one which possesses the greatest number of small rootlets springing from moderate-sized roots, starting from what we call the collar of the tree, that is, the point of junction where roots and branches, the descending and ascending axes of the physiologists, meet. I exclude the fibrous threads which proceed from the rootlets, because, until they acquire substance and themselves become rootlets, they are of little use in perpetuating the life of the tree; in fact, a great portion of them perish annually. I have, indeed, sometimes thought that their action must be somewhat analogous to that of the leaves on the branches, and that as the dormant season comes on, their office as feeders being fulfilled, they perish in like manner. At all events, it is a fallacy to insist so much on the preservation of the *fibres* in removing trees, because new rootlets emanate from small roots having substance, and these send forth the fibres to collect food in the same manner as branches put forth their leaves to elaborate it, and both alike perish in the course of time.

Now, if we plant our fruit-trees in a sound virgin soil, or failing that, in a compost from which all stimulating matters are absent, we take the best means to ensure a tolerably equal and free development of those small rootlets, by which only we can preserve an equal balance between the roots and branches. But let us only introduce, either in close proximity to the roots, or at a little distance from them, some strong stimulating matters, which can be easily taken up by the rootlets, and the chances are that we shall have two or three large roots taking the lead, and absorbing an undue amount of food, which, reacting on the branches, will cause some of the central ones to start into luxuriant growth in like manner. In practice, however, before this could take place, the hand of the operator should

step in and divert the course of the sap, by the application of another great principle in manipulation, that of stopping or pinching back—of which more hereafter. At present I state the principle broadly, in order that the operator may recognise



DRACÆNA BAPTISTII (see p. 53).

those natural tendencies which it must be his endeavour to counteract and divert to the attainment of sound, healthy progress. I trust that sufficient has now been advanced to show that in the earlier stages of growth this necessary

result will be most effectually promoted by affording the tree a due amount of plain and substantial food. We shall find in after-years that a very great advantage will result from the application of stimulating matter, since it will impart an increase of vigour upon which to work when the energies of the trees become more severely taxed than they are in their young state.—JOHN COX, *Redleaf*.



DRACÆNA HENDERSONI.

DRACÆNAS—BAPTISTII AND HENDERSONI.

OF the many new Dracænas which have been introduced to cultivation within the last few years—novelties which have afforded considerable variety as regards the form, size, and colour of the leaf, and the contour of the plant, few are more strikingly distinct in their way than *D. Baptistii* and *D. Hendersoni*, of which, thanks to Messrs. Veitch, we are able to append very char-

acteristic figures. They both belong to the series with broadish oblong-lanceolate leaves, and in both cases the variegation consists of stripes of paler and brighter hues, distinct from the ground-colour, and abundantly different from the white and rosy tints which break out in the young growth of many other kinds, when well cultivated, the colours being here distributed in narrow lines or streaks. Both varieties are said to come from the South-Sea Islands; they are probably, like most of the other recently-introduced sorts, the result of cultivation there.

Dracæna Baptistii was introduced from the nursery of the Messrs. Baptist, of Sydney. Its leaves are of a purplish-bronze colour, $1\frac{1}{2}$ ft. to 2 ft. long, tapering at the base, and acuminate at the apex; they are bold in character, and margined and irregularly and obliquely marked with narrow stripes or flakes of creamy-yellow, which pass through pale pink to deep rose as the leaf acquires age. While growing the plant shows all these graduations of colour, and is then extremely interesting; but at the end of the season, the rosy tint predominates in the markings. The stalks of the leaves are striped in a manner similar to the leaves themselves, the markings of which appear in the youngest stages of growth. This plant has gained certificates both from the Royal Horticultural and Royal Botanic Societies.

Dracæna Hendersoni resembles the preceding in that it has narrowly striped leaves, but yet the plants are thoroughly distinct. The leaves in the present form are equally bold in character, being from $1\frac{1}{2}$ ft. to 2 ft. long, and 4 in. to 5 in. broad, of elegant and graceful habit; but the surface is more thickly marked, so as to acquire a mottled appearance, with short irregular and unequal white and rosy-pink streaks. It was certificated last season by the Royal Botanic Society.—T. MOORE.

HARDY GRAPES RIPENING IN 1874.

 COLLECTION of *Hardy Grapes* planted on a glass-covered wall here ripened during the last fine summer and autumn the best crop I have ever grown on it. Perhaps the names of the varieties may be interesting to some of the readers of the FLORIST AND POMOLOGIST who may want to plant hardy Grapes in houses without fire-heat, or on the open walls. Although such warm favourable summers as that of 1874 only come at intervals, still there are some kinds of hardy Grapes that, with a little attention in protecting them in the cold spring months, when budding or in flower, will produce ripe grapes in our ordinary summers. The glass-covered wall here, where the hardy Grapes are planted, has only artificial heat applied when the Peaches and Nectarines are in flower, so that the Grapes have not the same advantage at their blooming time.

I will commence with the White Grapes, as they were the earliest in ripening. The *Early White Malvasia*, or *Early Kienzheim* of the Royal Horticultural Society, ripened perfectly in the middle of August; this sort seems to me to be synonymous with the Grove-End Sweetwater. *Royal Muscadine*, or the *Chasselas de Fontainebleau* of the French, ripened in the end of August, and is one of the very

best early white grapes. *Early Smyrna Frontignan* is a Frontignan-flavoured grape, and ripened as early as the Royal Muscadine. *Early Saumur Frontignan* is another very early-ripening Frontignan-flavoured sort. The *Prolific Sweetwater* and *Buckland Sweetwater* ripened in the end of September, and got to a fine amber colour in October, and their flavour was excellent.

Of early Black Grapes, the *Sarbelle Frontignan*, a purple Frontignan-flavoured variety, ripened in the beginning of September, but it has only a small bunch. The *Esperione* or *Espiran*, the hardiest of the Black Hamburgh section, ripened in the middle of September, and was finely coloured. The *Welbeck Black Tripoli* ripened in the middle of October, the bunches being as fine as some of the same variety grown in the vineries.

To show that the fine warm dry summer of 1874 has been particularly favourable for ripening Grapes in unheated structures, I may state that two plants of the *Muscat of Alexandria* which were planted out in mistake with the hardy sorts both ripened their bunches; the grapes were not very highly coloured, but perfectly Muscat-flavoured and good. A plant of Pearson's *Ferdinand de Lesseps* Vine likewise, lately planted out in the same collection, has borne some bunches this year, and promises to bear well as a hardy Grape.

Some of the above varieties of Hardy Grapes will ripen their fruit, even in bad seasons, in all our southern counties, if planted on a south aspect on walls or buildings. There cannot be a finer ornamental climber on a poor man's cottage than a Vine, whether in leaf or in fruit, but it requires attention in nailing or tying it to the walls, and in properly thinning and stopping the shoots every year. If allowed to grow wild, it gets battered about by the wind, and is then both unsightly and unproductive. There is no occasion for making expensive borders in which to grow hardy Grapes out-of-doors, for if the soil is anything at all of a fertile nature and drained, they will succeed well on it. In planting them in unheated structures, it would perhaps be better to give them a newly-made border, if the natural soil is not suitable or drained, with the view to the production of good-sized bunches and well-flavoured berries.—WILLIAM TILLERY, *Welbeck*.

FRUIT-CULTURE *versus* CREMATION.

READ with some interest Mr. Forsyth's remarks on the above subject (FLORIST, 1874, 276), but am afraid they will be somewhat apt to mislead. Is "Mother Earth robbed of her rights," if the lamp of science shows us that it is better to employ a quick and cleanly method of decomposition, instead of a slow and repulsive one? I think decidedly not. Fire more fully separates the chemical elements of bodies (which elements are indestructible), and sets them free in a harmless form. The gases generated by heat, being lighter than the air near the surface of the earth, mount rapidly, and leave us the pure air to breathe; while Dame Nature, who is a perfect chemist, just as she is perfect everywhere, when man does not thwart her, mixes her manures up among the moisture-laden clouds, and down they come in the most perfect form of rain. This is one reason that rain does plants more good than spring-water, simply because the latter is spent, having lost its manurial properties by contact with the dry soil—one of the best deodorisers—or with the root-perforated earth. Flesh and blood, when decomposed, are both valuable manures without a doubt, but in a crude state they do far more harm than good.

Take the old system of manuring Vine borders with dead cattle and deer, for example. This was commonly done forty or fifty years ago, and singularly enough, small grapes were then the rule rather than the exception. Compare the results with those now afforded by pure turfy loam, lime rubbish, and a few handfuls of bone-dust. Even supposing that our churchyards do produce fine fruit, do they not also exert a baneful influence on the water-supply of many districts? Sensitive people would not care to be told that the luscious Bon Chrétien or Marie Louise they were eating had derived its exquisite flavour from the rotting bones of a burial-ground. I said 'exquisite flavour,' because Nature is too perfect in the art of chemistry to leave any traces of the source whence she derives her delicate flavours and balmy perfumes; and fruit grown in a churchyard is quite as free from any impurities as that grown in the purest virgin soil. It makes no matter how we apply manures, plants can only absorb them in watery solution or in a gaseous form; and whatever change takes place in the food and moisture after they enter the tissues of the plant, one thing is clear, namely, that the spongioles act much in the same way as the stomach in animals, since they exercise the power of selecting nothing but what the plant requires to complete its development. Cremation is a dreadful bogey to a certain class, but I believe Mr. Forsyth's theory of utilising dead bodies as manure would meet with a far greater amount of disapproval from all intelligent people. Had man remained in his natural state, cremation would scarcely have been required, but in large and densely populated places it has become almost a necessity—a necessary evil, if you will, and is in the opinion of many far preferable to the costly and morbid display which, in too many cases, attends our present mode of burial in densely crowded localities.—F. W. BURBIDGE.

* * See on this subject, Mr. F. Seymour Haden's letter in the *Times*, of January 12, 1875, in which he argues that the remedy for the evils of our present system of Burial is a recognition of, and a timely submission to, a well-defined law of nature; that the soil at our feet and everywhere at our disposal is the most potent antiseptic known, and the readiest of application; and by a combination of forces inherent in it, which might well appear contradictory, but for the wonderful purposes they are destined to effect, it is resolvent and reformative as well, so that what under the influence of the air was putrefaction, in the earth becomes resolution, what was offensive becomes inoffensive, and what was decay becomes a process of transmutation. "To doubt that one of the purposes for which the earth was thus endowed is the resolution and conversion of its dead, or its perfect competency to effect that purpose, would pass comprehension, if habit had not taught us to shut our eyes to it."—ED.

GARDEN WORK FOR MARCH.

FLOWERS.

THOUGH the thermometer approached zero during the closing days of the past year, it is remarkable how thoroughly even tender plants have escaped injury. This is to be attributed solely to the persistent mantle of snow by which vegetation was enveloped. I have not observed that a single plant has been damaged; the bands of *Echeveria secunda glauca*, a plant that has never stood here before in the open borders without protection, remain as fresh as ever, and the blossoms of the *Laurustinus* are not affected. Ornamental Shrubs upon lawns must now be pruned, so as to preserve their proportions, such kinds as *Bays*, *Portugal Laurels*, *Hollies*, *Aucubas*, &c., being cut with the knife, so as not to lacerate the foliage. Lawns should be looked over at this season, grubbing up by the roots daisies, dandelions, plantains, and all the coarse weeds which are likely to become unsightly if not eradicated.

Roses should now be pruned, thinning the shoots freely out, and preserving the strongest, which should be cut back in proportion to the vigour of the individual kinds. The more robust should be left from 12 in. to 18 in. in length, whereas the weaker growers—for instance, *Marie Baumann*, *Louis Van Houtte*, &c.—are most satisfactory when cut in close. Make good all vacancies, and if not already done, slightly fork over the surface, avoiding deep digging.

Hollyhocks should now be planted out upon ground that has been deeply trenched, and heavily enriched with decomposed manure; plant at about 3 ft.

apart. The beds for *Carnations* should be prepared by dressing with fresh loam and cow-manure in a thoroughly decomposed state; if this has not been mixed with the loam and frequently turned previous to use, it should be turned up in the beds to the action of the weather previous to planting, and it is important that the manure should be well incorporated with the soil. The same remarks hold good in respect to *Pinks*. *Pansies* may be planted in beds which are in good condition, and delight in a moderately-shaded position; choose a favourable time for planting-out, when the soil is rather dry. *Gladioli* may also be planted, and a sowing of *Hardy Annuals* made towards the end of the month, provided that the ground is in a dry state, otherwise nothing is gained by sowing early. Transplant autumn-sown *Annuals* into the places where they are to flower, being careful to remove them with good balls attached; when properly attended to, few plants present a more cheerful effect than these during the spring months.

Conservatories will now be brilliant with the gayest of flowers, and from the great variety we possess, it becomes necessary to discard freely, to prevent crowding. *Camellias* planted out for early blooming will now be past, and their form should be regulated by cutting back wayward shoots, at the same time guarding against too free a use of the knife, much cutting being inimical to bud-formation. If the soil about the roots has become poverty-stricken, a surface-dressing of fresh soil will be necessary; this is not to be recommended if the plants are vigorous and healthy, as *Camellias* are not improved by too much meddling at the roots, and, moreover, when once established in proper soil, they will last for a number of years without needing to be disturbed. Give to plants that are starting into growth manure-water with soot. *Luculias* that have finished blooming should be freely cut back, and preparatory to their putting out fresh growth, they should be dressed with a preparation inimical to thrips and red-spider, to which pests they are subject. Towards the end of the month, during bright gleams of sunshine, a movable shading of tiffany will be serviceable at times.

In the *Greenhouse*, the *Indian Azaleas* that have finished blooming should have the seed-vessels picked off. Before starting them into growth they should be thoroughly fumigated, or what is better and more permanently efficacious, immersed in or syringed with the following mixture (—in 10 gallons of water dissolve 5 lbs. of soft-soap, and add 2 gallons of good tobacco-water), as a cure for red-spider or thrips. *Epacris* that were cut over to within an inch or two of the previous season's growth a month ago, will now be starting into growth, and should be potted into moderate-sized, thoroughly-drained pots, using a sandy peat, and being particular that they are firmly potted; they will start most freely in a close, slightly-heated pit, kept moderately moist, being careful not to give too much water at the root until they become established. Cut back *Linums*, *Eupatoriums*, *Libonias*, and *Monochætums* that have finished blooming, and propagate from the young wood. Propagate also an early batch of *Perpetual Carnations*, which will now root freely in heat, and make famous plants for winter blooming, if liberally grown on. Encourage *Hydrangeas*, which are so valuable for decorative purposes, with liberal waterings of liquid manure.

Pelargoniums will now be growing freely, and will require attention, both in regard to watering and the tying of the shoots, the main object being to secure symmetrical plants, with the shoots equally balanced. With the increased length of days, an increase of temperature may be allowed, and greater humidity of atmosphere. Roof-ventilation should be given early on bright mornings, but be careful at all times to avoid draughts, and shut up early in the afternoon, which will economise heat. Weak manure-water should now be given to such as are in a forward state. The fragrant Italian *Tuberoses*, which are deserving of more

general cultivation, should now be procured, as imported roots are most to be depended upon; pot them singly in 6-in. or 7-in. pots, well drained in a compost of turfy loam, enriched with one-third rotten dung or leaf-soil, and opened with sand, which will grow them freely; the crowns should be covered about an inch with soil. Place them in bottom-heat until established, watering sparingly, and afterwards gradually hardening them until they will bear exposure near to the glass in a greenhouse, where they will require an abundance of water.

Auriculas, as the plants are now growing freely, must have protection from frosts, with a more liberal supply of water at the roots; give an abundance of air upon every favourable occasion, and fumigate occasionally to keep down the green-fly. *Cinerarias* will be coming into flower, and must be kept free from insects by frequent fumigations; the plants must be well supplied with manure-water, and be kept near to the glass. The same remarks hold good in regard to *Calceolarias*; the latest-struck plants should at once have their final shift, and be kept near to the glass, staking and tying-out the flower-stems as they advance in growth. Sow seeds of *Primula sinensis* and of *Cinerarias* for early flowering.

Stoves: The potting of all kinds of plants in these will now be completed, and attention must be directed to the timely shifting of young growing stock, which should never be allowed to become pot-bound. *Euphorbia jacquiniæflora* should be cut back, first allowing the plants to become moderately dry, so as to prevent any excess of bleeding. They are very difficult to keep compact, without tying-down, which is an unnatural-looking method; but if potted when they have fairly broken, and plunged in a brisk heat, they will make rapid progress, and the young shoots should be pinched back when about 4 in. in length, which will tend to multiply their number, and with one other stopping when they are again about the same length, the foundation will be more dense and well furnished. The plants should afterwards be kept in the full sun and near to the glass; indeed they should never be shaded or over-potted. Thus treated, one of the most straggling and yet most lovely of plants may be somewhat restricted in habit, and thus made more serviceable. Successional batches of *Achimenes*, *Gloxinias*, *Caladiums*, and *Begonias* should be started. Increase the temperature and moisture in proportion to the lengthening days, syringing at the time of shutting-up. At present, ventilate at the apex only, and thus avoid cold currents of air.

Bedding Plants: Propagation should now be pushed forward with despatch. *Alternantheras* will be growing freely, and should be propagated in quantities, as by far the best plants are procured from cuttings that are rooted now. Some growers propagate quantities of these in autumn, under the idea that they will have finer plants, which is a mistake, for without they are cut completely to the ground and started afresh, they will never produce healthy growth. Start *Dahlia* roots in a brisk, moist heat. Sow seeds of *Tender Annuals*, such as *Celosias*, *Balsams*, *Amaranthus*, *Nicotiana*, *Perilla*, *Ricinus*, *Tagetes*, &c. Such *Pelargoniums* as have been wintered in boxes should now be potted; those that are in small pots will be benefited by a shift into fresh soil; even if they are but shaken out and replanted in the same-sized pots, they will be found to derive benefit therefrom, and their roots, being in a fresher condition at planting-out time, will more quickly grasp the fresh soil than those which have been long confined in small pots; they will also more than save the labour of potting by requiring less water at the root. *Bedding Pelargoniums* are now so numerous that it is somewhat difficult to make a selection, as most growers have special favourites. The following I find to possess a free-flowering habit, with continuity of bloom throughout the season:—*Scarlet*—Vesuvius, Waltham Seedling, Bayard, Violet Hill Nosegay (should be grown in rich soil, when it is first-class), Bonfire, Grand Duke; *Pink*—Amaranth,

Mrs. Fytche, Cleopatra; *White*—White Princess, Madame Vaucher, White Clipper; *Golden Tricolor*—Sophia Dumaresque, Mrs. Pollock, William Sandy; *Silver-leaved*—Flower of Spring, Queen of Queens, Mangles's Variegated May Queen; *Bronze and Golden Leaf*—Maréchal MacMahon, Black Douglas, Golden Harry Hieover, Crystal Palace Gem, Golden Fleece. Plant out *Calceolarias* in cold frames, or they may be planted out in turf-pits or sheltered situations towards the end of the month.—GEORGE WESTLAND, *Witley Court*.

FRUITS.

Vines: Now that we are getting more light and solar heat, the temperature in the succession houses may range from 65° to 70° at night, and be raised in proportion through the day. *Early Muscats* coming into flower require a high temperature, with air to ensure their setting properly. Keep up the requisite moisture in the early house till the fruit begins to colour; make the best of sun-heat by closing early in the afternoon, and if, after a bright day, the house be closed at a temperature of 85° or 90° , so much the better. The beginning of this month is a good time for starting *Muscats*, *Lady Downes' Seedling*, and *Alicante* intended for keeping late in the season. *Vines in Pots* intended for fruiting next season, should now be potted, and plunged in a moderate heat. See last month's directions for other Vines in pots.

Figs: Keep a night temperature of about 60° to those started last month; maintain the necessary moisture by syringing at closing time, and damping the floors of the house. Remove all useless growth, so that the shoots do not get overcrowded. A good supply of water, with liquid manure occasionally, should be given to those in pots.

Peaches and Nectarines: See previous directions in regard to temperature, &c. Thin the fruit in the early house by degrees, leaving sufficient at present to allow for dropping during the process of stoning. Towards the end of the month, as light and heat increase, the temperature may range a little higher, especially in bright weather; thin out the shoots, selecting and tying in those required for fruiting next season; use the syringe night and morning to keep the trees in a healthy condition, and water the inside borders; give plenty of air to the *late* house when the trees are in bloom.

Pines: Any succession plants requiring a shift, that were not done last month, should now be potted, and for this use a porous turfy loam mixed with a little rotten manure; do not press the soil hard in the pots; avoid strong bottom-heat, and keep the plants a little close for a few days after potting. When they begin to grow, more air should be admitted. Pot suckers and attend to the linings of those in dung-pits. Look carefully over the entire stock of plants, and give to any that are dry a good soaking of water. Give air according to the state of the weather. See previous directions for plants in fruit.

Cherries and Plums: When the trees are in flower, the atmosphere should be less humid, and abundance of air must be admitted; keep a night temperature of 60° , and through the day, during sunshine the glass may range 10° higher. Great care should be taken after the fruit is set, as too much heat at that stage will endanger the crop. *Plums* require plenty of water at the root, but in other respects may have similar treatment to the Cherry.

Strawberries: During the time the fruit is swelling, the plants should be liberally supplied with liquid manure; do not at any time allow them to suffer from drought; clip off all deformed fruit and small flowers. Use the syringe to keep down red-spider, and give plenty of air to those in bloom. Place more plants in late vineries or pits for succession. If the demand for this fruit be large,

and the stock of plants limited, some strong young plants may now be taken up with a ball from the open ground, potted and placed under glass at once. These, if taken up carefully and potted in rich soil, will usually produce a good crop.

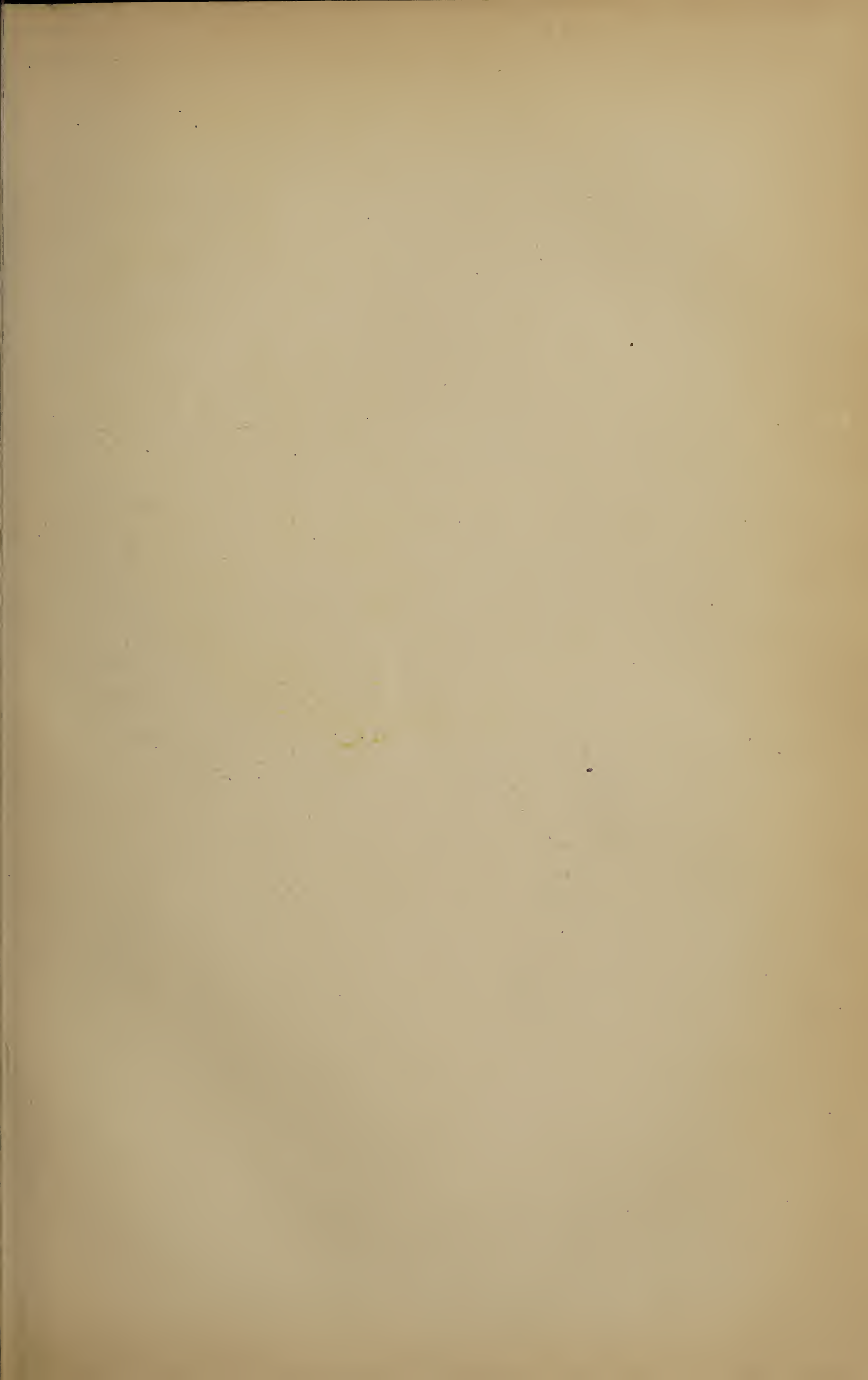
Melons: Attend to the linings, and maintain a top-heat of 70° ; earth up the plants as they advance in growth, adding a little by degrees. Pinch out the points of the leading shoots, when they have reached nearly across the bed, and thin and stop all others just above the show for fruit, *i.e.*, the fruit-blossom. Air freely in good weather, but close the frames early in the afternoon.

Hardy Fruits: If any work in this department advised last month remains undone, it should be proceeded with at once. Mulch all newly-planted trees; also those in a *weakly condition*. Plant *Strawberries*, and use the hoe frequently in dry weather round the plants in the fruiting-beds. Prune *Filberts* as soon as the blossoms are visible; shorten or cut out all shoots that do not show for fruit, and keep the main branches thin. Graft *Plums* and *Cherries*, also *Pears*, *Apples*, &c., at the end of the month. Head down at once large trees that are intended to be grafted this season. Attend to the protection of *Peach* and *Apricot* blossoms. Give air daily in bright weather to *Orchard-houses* and glass-cases, closing early in the afternoon if any appearance of frost; keep the houses dry and airy while the trees are in bloom.—J. POWELL, *Frogmore*.

VEGETABLES.

March is, perhaps, one of the busiest months in the kitchen garden proper. The ground should have all been dug or trenched, and hence should now be in readiness for the bulk of sowing operations—this more especially after the first two or three weeks. We do not advise too early sowing, because very harsh weather is sometimes experienced during the first two weeks in April, and it is not advisable by sowing too early in March to have the tender seedling plants just through the ground under such conditions, running the unnecessary risk of a severe check. Where the ground has been long dug up and become surface-bound by snow and frost, it may be well to lighten it up again. Heavy soils may be neatly fork-dug, so as to disintegrate all large clods, &c., packing it up lightly, and leaving it to dry. Light soils, no matter how long they may have been dug or trenched, will at the most only need to have their surface slightly freshened up. Should a wet period occur about the time indicated, do not by any means attempt to sow the seeds; but if “March dust” then prevails, use the utmost despatch to get in all such things as second-crop *Peas*, *Broad Beans*, *Spinach*, *Lettuce*, *Endive*, *Parsley*, &c.; such main crops as *Onions*, *Parsnips*, *Carrots*, &c.; and an early sowing of *Beet*, *Brussels Sprouts*, *Coleworts*, *Cabbage*, *Savoy*, *Early Broccoli* (Snow’s, Walcheren, Grange’s, &c.), and *Turnips* (Early Stone or American Strap-leaved Red). Sow in the main moderately shallow, as it is neither natural nor desirable to sow any such seeds deeply. Work the soil freely about and around the seeds, and have instant resort to the customary means to protect them from birds and other enemies.

Autumn-sown *Cauliflowers* must receive an increased supply of air, by removing all kinds of protection entirely by day, and only half covering them by night during all fine and moderately fine weather. Bring the planting of *Jerusalem Artichokes*, *Globe Artichokes*, *Horse-radish*, *Seakale*, *Asparagus*, *Potatos* (early), *Onions* (Tripoli), &c., to a close by the end of the month. Make fresh beds or plantations of all permanent kinds of Herbs, such as *Sage*, *Thyme*, *Tarragon*, *Mint*, *Winter Savory*, &c.; and in all instances where, owing to the youth or thriftiness of existing beds, this may not be deemed necessary, give to such as were not mulched according to the conventional way in the autumn, a good





J L Macfarlane del.

Lady Henniker Apple.

mulching with small or finely decomposed leaf-mould, pruning back all such plants as have become unduly large and bare in the centre.

Amateurs who may not have commenced growing *Cucumbers* or *Melons*, as suggested last month, should now make a commencement, by preparing the necessary materials, making up the necessary beds, and sowing the chosen seeds with all possible despatch. *Monro's Duke of Edinburgh* or *Telegraph* are good varieties of the former, and *Read's Scarlet*, or where the high heat necessary cannot always be maintained, *Little Heath*, will be found meritorious varieties of the latter. Sow *Tomatos*, either of the kinds known as *Hathaway's Excelsior*, *Carter's Green Gage*, or *Earley's Defiance*. In regard to *Cucumbers*, &c., permanently advancing, keep up an uniform warmth of 70° by night, to be increased 5° or 10° by day, according to the brightness or otherwise of the weather, but always insure a moderately moist atmosphere in conjunction with all the fresh air possible.—WILLIAM EARLEY, *Valentines*.

APPLE LADY HENNIKER.

WITH AN ILLUSTRATION.

WE are already in possession of such a large and excellent stock of Apples, that the introduction of a new variety would seem almost a work of supererogation. Of kitchen or cooking apples especially, we have a very extended list, and many which, when well cultivated, are so good, that it would be extremely difficult to find fault with them. We are bound to admit, however, that occasionally advances are made, and new varieties introduced which are decided acquisitions; and among such we may place the subject of our present notice and illustration.

The *Apple Lady Henniker* is of the largest size, some fruits measuring over 13 in. in circumference. It is of the Codlin shape, the fruits being high, inclining to conical, and obtusely angular. The eye is small for such a large fruit, open, and placed in a deep, angular cavity. The stalk is short and deeply placed. The skin is of a deep straw-colour on the shaded side, light brown where exposed, and streaked with bright crimson, with a small patch of russet near the stalk. The flesh is of a pale yellow, firm and tender, of a brisk, sub-acid flavour. It is very excellent when cooked; and is in season from October to Christmas.

It is a seedling raised by Mr. Perkins, the gardener to Lord Henniker, at Thornham Hall, Eye, Suffolk, and was awarded a First-class Certificate by the Royal Horticultural Society. The variety is now in the hands of Messrs. Ewing and Co., of Norwich, by whom it is being sent out, and to whom we are indebted for the very fine example represented in our plate.—A. F. BARRON.

FRUIT-TREE TRAINING.

I WISH to supplement Mr. Temple's remarks on this important and seasonable topic with a few others, and this having been the subject of conversation on a recent visit to Blenheim, I make them with the greater freedom, as our views entirely coincided. One great source of bad training may be ascribed to delay in the discarding of what are technically termed rider-trained

or standard-trained trees. These and the dwarf-trained trees are commonly planted together, alternately, and of course the "rider" is planted with the primary intention of cutting it back or destroying it as the dwarf advances, but this is done in such a cheeseparing and gingerly way, that the poor dwarf never gets of age, which it should do at 10 years, till it is perhaps 20 or 30 years old—perhaps even never, for the rider, its ruiner as it may be termed, is allowed to remain, and while it never makes a decent tree of itself, it does not allow its lowly neighbour to become one.

My humble opinion is that rider-trees should never be planted, for two chief reasons—that they are costly, and never make a return for the outlay, if you take into consideration the deteriorating effect they have on the well-being of the permanent dwarf-trained trees. Riders and dwarfs look very pretty on a wall, when about 8 or 10 years old, but the dwarfs look much handsomer planted alone, occupying the whole surface, and covering the entire wall, as they should do at this age. If planted at 20 ft. apart, on a 14-ft. wall, Apricots and Plums should cover this space in less time than that just indicated.—HENRY KNIGHT, *Floors*.

DRACÆNAS—REGINA, AMABILIS, ETC.

DRACÆNAS are without doubt some of the most noble and useful plants that we possess for general decorative purposes, being alike applicable for the embellishment of the conservatory, dinner-table, and dwelling-house, and scarcely less so for that of the flower-garden during the summer months. They present a fresh, lustrous leafage, and elegance of outline which is not surpassed by any other class of plants; and, thanks to the indefatigable exertions of our collectors, there have been introduced into cultivation of late a large and diversified assortment, remarkable both for their varied general aspect, and for the rich hues of their leaf-colouring. Of the light and rose-coloured species, I can confidently recommend *D. amabilis*, *D. imperialis*, and *D. regina*, as most distinct and desirable acquisitions, since they contrast so effectively with the crimson kinds. It is, however, more particularly respecting the last-named species that I shall now offer a few comments.

The *Dracena regina* was introduced by the late Mr. John G. Veitch, from the South Sea Islands, and was distributed by the Messrs. Veitch in 1868; yet we but seldom meet with it grown so as to develop that striking contrast which the white variegation of the plant is capable of producing under a more liberal system of cultivation. I would here remark that the finest plants I have been able to produce have been from top-cuttings, rooted annually upon the plants. Two upward incisions are made with the knife, one on each side of the stem, the wound being kept open by the introduction of a chip of cork, and wrapped round with Sphagnum moss, while the top is secured by means of a firm stake. The plants are afterwards placed in a close, moist stove-heat, and the moss kept constantly wet by syringing. Thus treated they will emit roots profusely in the course of a few weeks, when they may be cut off and potted, and with the pots plunged in a brisk, moist temperature, they will quickly establish themselves

without the slightest symptom of exhaustion, or the loss of a single leaf. They must be potted on as they require it, and in this way they produce, in a strong, healthy, dwarf form, those distinct characteristics of leaf-variegation which are so effective and desirable in decorative plants. Of course, the tops may be cut off and rooted as cuttings in separate pots, but I find that when so treated, strong gross tops are apt to lose a portion of their leaves, which detracts considerably from their effectiveness. This species grows freely in a compost formed of rich turfy loam and peat in about equal parts, adding sand and charcoal to insure porosity. It is important to drain the pots freely, as they require an abundance of water when growing, and they need syringing freely to keep under both thrips and red-spider, which would quickly mar the lustre of the foliage if allowed to become established upon it. Encourage the plants in a brisk heat when growing, and harden off by degrees for decorative purposes. They will stand exposure well. When well grown, I find this *Dracæna* one of the most unique and pleasing decorative plants that we possess. It is from the great facility with which this class of plants is generally grown, that minute items of cultural requirements, in the case of certain species, are overlooked.—GEORGE WESTLAND, *Witley Court*.

THE ECONOMY OF LABOUR IN GARDENS.

IT is truly astonishing to observe, in the course of one's rambles, the disorder and slovenliness which occur in performing the most trifling matters, in some establishments, from sheer lack of forethought, and not from the lack of sufficient strength or time to perform everything in a proper way, were the bump of Order but present. This lack of forethought in neglecting to lay down simple economical plans for performing all and every little operation, and in not seeing that it is duly performed, is the reason why we find some folks always behind, and always in a muddle.

In many places I have observed, both indoors and out, that gardeners and their men, in the season of thinning the young shoots of Peaches, Nectarines, and other fruit-trees, or thinning and stopping the young shoots of Vines, whether they are infested with aphids or other insects or not, drop all the refuse on to the floor or borders, and tread it under-foot, leaving it, in fact, for some other person to clear away afterwards, and thus allowing the aphids an opportunity to hide away ready to make another attack. Instead of this, they should wear an apron or a nail-bag, to receive at once from the hand all such thinnings and refuse, which is thence to be conveyed into a box or basket, always provided and at hand for the purpose, and which, when full, should be carried off to the stoke-hole fires, to the fire that is kept for heating the boiler of hot water for syringing, or furnishing tepid water for plant-watering, or to be buried in a fermenting rubbish-heap, where hot lime is pretty frequently made use of. Thus the nuisance of the rubbish being left under-foot is done away with, and the time of the person who has to come after and collect it, and which might be much more profitably employed, is saved.

Another slovenly practice I have also many times observed, is that of men when thinning, disbudding, stopping, pruning, or nailing fruit-trees, treading-down the edgings of the borders, and putting everything out of shape or order, instead of making use of two light boards to stand on. These boards should be about 5 ft. or 6 ft. in length, 1 in. thick, and 10 in. or 12 in. wide, with three little ledges nailed across the under-side, one in the middle, and one within 3 in. or 4 in. of each end, for the convenience of moving them easily with the foot or hand as the work proceeds; and they should always be taken away to the tool-house with the ladder, when the work is done, and swept clean, so as to be dry and ready for next day's work.

How often, too, are we obliged to observe digging and trenching performed in the most slovenly, unworkmanlike manner; two men placed to perform it on narrow slips and borders where there is only room for one man's strength, the clods allowed to tumble over on to the walk, and the weeds, leaves, and rubbish left in the edgings for another person to clear up!—JAMES BARNES, *Exmouth*.

COTONEASTER FRIGIDA.

 R. SAUL, of Stourton, has recently (FLORIST 1874, 279) called attention, and very properly so, to the beauty of *Cotoneaster Simonsii*. I supplement this, by inviting attention to the *Cotoneaster frigida*,—not indeed as being so useful for game coverts as the one Mr. Saul mentions, because it grows too high, while its habit is quite different, it being a deciduous shrub, while *C. Simonsii* is an evergreen. Nevertheless, for ornamental groups in parks, or in a mixed shrubbery in the pleasure-ground, planted in a conspicuous place, I question if *C. frigida* is equalled by any other berry-bearing shrub, at the time when it is at its best, that is, from September till the beginning of December. The berries, which are of the deepest and most brilliant red, are produced in great profusion, but when they are fully ripe the birds take them, or they would remain to be serviceable much longer. At this place there is a very nice natural rock-garden, leading down to the water, with a bank on each side of it. A plant of this *Cotoneaster* is growing on each bank, with other ornamental things, and when it is in fruit it is so conspicuous at a distance, that those unacquainted with its appearance are quite puzzled to imagine what it is. A better knowledge of its highly ornamental qualities would, however, convince all such persons that it is a shrub not to be lost sight of, and quite worthy of a prominent place in all pleasure-ground arrangements.—THOMAS RECORD, *Vinters Park, Maidstone*.

PLUMS FOR A NORTH WALL.

OME readers of the FLORIST AND POMOLOGIST may be interested to know what Plums are suitable for a north wall, for it happens in many gardens, large and small, that north walls are not made the best of. Five years ago, such was the case here, and we planted three trees of *Rivers's Early Pro-lific* and two of *Rivers's Early Favourite Plums*. Both these have proved, for

the last two seasons, the most productive Plums that we have here, and succeed the same kinds grown on the south wall, those on the north being about a fortnight later than those on the south wall—those on the south wall ripening at the end of July, those on the north wall about the middle of August. When they are thoroughly ripe the flavour is good, being very sweet and juicy, and they can be used either for tarts or dessert.

Another Plum we have grown on the same wall is *Prince Englebert*, which was figured in the *FLORIST AND POMOLOGIST* for December, 1874; this bears and ripens well, and is good enough for the dessert-table.

Denyer's Victoria is also with us a great bearer, but the fruit grown on the north wall is not so large nor so good in flavour as that which is grown on an east wall in the same garden; it is nevertheless very useful for culinary purposes.

The *Orleans Plum* does well with us on the north wall. We grow both the *Blue Impératrice* and the *Ickworth Impératrice* on the same wall, but they are very shy bearers compared with those named above; still, being very late varieties, they are worth growing, as they hang on the trees well for weeks after they are ripe.—WILLIAM PLESTER, *Elsenham Hall Gardens*.

PECULIARITIES OF VINE-CULTURE.

DURING the thousands of years that have gone by since men first grew corn and wine, every year has had its seed-time, its vintage, and its harvest; and we infer that each generation has left its laws and code of culture to the next, in the first instance, by act or word, and eventually by writing. Hence we read of the browsing of a goat first suggesting the pruning of the Vine. From that rude beginning, down to our own time, what changes have come over pruning! I once saw a celebrated Grape-grower, Mr. Crawshay, at Colney Hatch, Middlesex, prune his Vines so closely that they were as smooth as walking-sticks! He trusted to adventitious buds for a crop, and was not disappointed; but, let me ask, what other plant than the Vine would have borne such cutting, and yet have lived and borne fruit?

When a plant in a pot pushes forth roots, they naturally travel outward and downward, and in so doing, keep feeling their way all round the pot for an outlet, so that one side of the feeders is always starving against a brick-earth pot. Now, in olden times, there were bulb-pots of great depth used, because the feeders of the bulbs made their way chiefly downward. The usual shape of a flower-pot is that of the frustum of a cone, whose greatest diameter is the same as its depth; but if the health and well-being of the plant were all that we were concerned about, the depth might be doubled, for we see the roots of a Hyacinth-bulb in water shaping their course downward, although there is nothing to divert them from spreading.

It seems to be an established fact that wherever water is rising in the form of vapour, there is always electricity. Again, we have the positive and negative of the earth and the air, so that at the very surface of the earth, and neither higher

nor lower, we have the spot where cuttings of plants form callosities, and finally emit roots. It is here also that seeds begin their work, and at this point most plants form their callus, and dip their root into the earth and raise their cotyledons into the air, as accurately as the mariner's compass holds to the Pole. The Vine is but a trailing shrub, and does little in the way of making itself into a tree, but any one seeing its fleece of leaves with all their hairs and points, would conclude that if there were any electricity about, such a plant would have its share. Now when the leaves have been reduced in number by pruning in winter, and stopping in summer, they have got to be six times the size of the normal leaf, and the size and quality of the fruit have been generally increased, like those of the leaf; but this has only been attained after a careful study of the wants of the Vine, and strict attention to having those wants supplied. Yet after all the experiences of the ages gone by, and the searching inquiries of our own time into the laws that govern the growing of prize grapes, it must be confessed that we often see the splendid *effect* without being able to seize upon the *cause*. I should reckon an amateur mad who should prune his Vines as Crawshay did his, but that gentleman surpassed his contemporaries in grape-growing. Choice Vines, inarched upon free-growing stocks, have been tried with good effect; and if we might argue from the Rose when worked, and grown upon its own roots, there should be a grand hitch here in the right direction; but an exhibitor comes forward and puts to silence all such notions by showing the finest grapes ever seen, grown on Vines raised from eyes, and consequently on their own roots.

The distance of the foliage from the glass is important. I have found the practice of the best growers to be to allow a space of 16 in. from the glass to the Vine when tied to the trellis; but a Vine of Stillwell's Sweetwater would not set its fruit at that distance, though it sets freely when dropped half a yard further down. These items puzzle young gardeners and amateurs, and when even old men are asked why things are so, it is not easy to render a reason.—ALEX. FORSYTH, *Salford*.

THE MACARTNEY ROSE FOR WALLS, ETC.

THESE will be but few, if any, gardeners, excepting they be very juvenile, who have not some distinct recollection of the Macartney Rose as having been met with in some old-fashioned garden, where it was cherished and valued greatly, ere the great advance now apparent in the quality and quantity of Roses was made. Their knowledge of it may, however, be associated in some instances with short, dense, twiggy bushes, giving them the idea that such was its habit, and that as such it is now unsuited for culture, in comparison with others of greater perfection as regards the blossoms, and greater profusion as regards growth, beautiful and much admired as were its nearly evergreen leaves. Having lately put its capacity of growth to the test, I am prepared to say that, as regards vigorous growth it falls behind very few. Three years ago it was chosen as an old acquaintance unforgotten, to adorn an east wall, and in connection with

some of the most telling and effective of modern adaptations. The result has been most satisfactory. Already has a plant reached the coping of a twelve-foot wall, and in the case of one strong shoot lateral branches have spread abroad, so as effectually to cover its allotted space. The possession of this vigorous habit, combined with its other qualities, render it all that could be desired, the evergreen leaves, so thick and abundant, and so lucid on their surface, being ennobled by the long pointed white bloom-buds, and the telling and lasting full-blown Roses! By-and-by, as time consolidates its growth, a permanent small-twigg garniture will be afforded by it, needing little attention beyond the occasional removal of decayed blossoms and a slight annual pruning, whilst in return it will commence to flower early in June—as early, being against a wall, as any other sort, while it will almost, if not quite, merit the chanting over its fallen petals of the sentimental requiem,—

“’Tis the last rose of summer,”

as it blooms sometimes well on into December.—WILLIAM EARLEY, *Valentines*.

EUCHARIS AMAZONICA.

WE find this plant (see p. 12) to bloom very freely here under the following treatment, and most of our plants have bloomed three times within twelve months. The whole of them, fifteen in number, were in flower in July, August, and September, each plant having from five to twelve spikes of blossom. In October, November, and December we had from two to four plants in bloom, with from four to ten spikes on each plant, this being the second crop of flowers from them; and others are now (January 11) with flower-spikes well above the foliage, which will be opening their flowers in about ten days, this also being the second crop of bloom. About March and April we get three or four spikes to most of the plants as a third crop. After this, we treat them as follows:—We supply them rather sparingly with water for about three weeks; then turn them out of their pots, take all the old soil from them, and repot them in the same pots, using equal parts fibry peat and yellow loam, with a liberal addition of sharp sand. The drainage should be ample: one-fourth the depth of the pot should be filled with crocks for this purpose, and these covered over with a layer of fibry material. Pot moderately firmly, and place the plants in a stove temperature of from 70° to 75° by day, ranging 10° lower at night. Water carefully, and syringe freely night and morning; as soon as they have got well hold of the new soil, give liquid manure twice a week. Treat the plants in this way until the middle or end of June, according to the time at which they are started into growth. If it is desired to have some of the plants in bloom in July or August, the treatment above described should be continued. If any are to be kept for succession, they must be removed to a cooler house, and must be brought into a higher temperature to bring them into bloom at intervals as required. If the above directions are carried out, I am certain they will prove successful, as this practice has been followed here for eight years with the same unvarying success.—HENRY CHILMAN, *Somerley Gardens*.

GARDEN GOSSIP.

AT this season it may be useful, writes Mr. Earley, to advise all who desire a fine large *Dwarf French Bean* to procure, where they can insure getting it true, the variety known as the *Canadian Wonder*. They may rely, he adds, upon its being not only a very fine long-podded variety, but also an abundant bearer, of about medium, or rather more than medium-sized growth.

— MR. W. E. RENDLE informs us that he has now adapted his *System of Glazing* to curvilinear roofs; and that the roof of the new winter garden to be established at Westminster, is to be constructed in this manner.

— M. HUBER, of Nice, offers a new *Pelargonium* which he calls *Pelargonium pseudo-zonale*, and which he regards as forming a new type in this already greatly varied genus. It is of rapid growth, with elongated decumbent branches, glabrous leaves, and umbels of lively red flowers.

— THE *Sarracenia purpurea* has now been growing out-of-doors for some years in an artificial bog in the Glasnevin Botanic Gardens. This winter the water surrounding it has been completely frozen, and it has since been nearly submerged, but still it looks quite fresh and hale and happy. It is evidently one of the hardiest of hardy plants.

— THE fine old *Fuchsia Riccartoni* had its origin at Riccarton, the seat of Sir Wm. Gibson Craig, Bart., near Edinburgh. Its name has no connection with Riccarton, near Kilmarnock, as has been supposed. It was raised from seed of *globosa* by the late Mr. Young, when gardener at Riccarton, betwixt the years 1830 and 1835. It is quite hardy on the east and west coasts of Scotland.

— THE *Ranunculus Ficaria calthifolius* is a very fine early spring-flowering herbaceous plant, and quite uncommon. It is much stronger-growing than our wild species, the common Pilewort, throwing erect large pale green leaves without markings, some on stout stems with the flowers, which latter are of proportionate size, and of a brilliant yellow. Many botanists would consider it worth specific distinction. It is a native of the Mediterranean region.

— ON the basis of numerous analyses of many varieties of Coal from different localities, it is again asserted that *Coal Ashes* exert a beneficial effect on land, not only by their mechanical action on some soils, but also on account of their mineral ingredients, a ton of ashes containing about 33 lb. of phosphoric acid, besides sulphate of potash and alkali.

— AT Gunnersbury Park, near London, the *Hardiness of Lapageria rosea alba* has been put to a severe test during the present winter, a vigorous shoot from a plant growing along the roof of a small span-roofed house having thrust itself through an opening in the woodwork. Though on an open north aspect, the shoot continues as fresh and healthy as those inside the house.

— SOME time since, writes Mr. Johnson of Belfast, I planted some Birches, *Betula alba*, in the foreground of a garden view, and to each of them I put one *Jasminum nudiflorum*, and one *Lonicera brachypoda aureo-reticulata*. These now form a pretty feature 10 ft. high, the golden flowers in winter and golden leaves in summer having a very pleasing effect.

— IN the *Revue Horticole* a method of *Budding Gooseberries* practised by

MM. Croux and Sons, nurserymen, of Sceaux, is described. These cultivators have trained a number of plants of *Ribes palmatum* to a single stem, and budded this as a stock with Gooseberries and Currants of various colours and forms. The result proves to be both curious and ornamental.

— THE Lucombe Oak, *Quercus Cerris subperennis*, deserves to be more frequently planted, for after the cold of last December its foliage looks as cheerful as at the beginning of autumn. The leaves are of a bright glossy green, and otherwise like the ordinary *Q. Cerris*, though perhaps a trifle thicker. There is a fine specimen of it at Kew, in the "Sion Vista," just within the Botanic Garden.

— THE *Helianthus globosus fistulosus* is a new double Sunflower, whose chief peculiarity consists in the globose form and large size of its flower-heads, which are sometimes said to measure a foot in diameter. They are of a bright saffron-colour, freely produced, and well elevated above the leaves. We have to thank Messrs. Sutton and Sons, of Reading, for the use of the annexed woodcut.

— MR. CORDEROY, of Didcot, has recently sent to the *Gardeners' Chronicle* some specimens of *Mistletoe parasitic on itself*. The young seedlings have attached themselves to the parent branches just in the same way that they usually do to branches of the Lime, or any other tree. Mr. Corderoy mentions also a variegated form, produced as a sport, and alludes to other variations in habit.

— AMONGST the specimens of *Wellingtonia gigantea* growing near the great conservatory at Chatsworth, is one which might well bear the name of *pendula*. We have noticed it on different occasions as being very distinct. It is paler in colour than the other *Wellingtonias* of the ordinary form, which grow near to it, and has all the smaller spray most gracefully drooping. The variety appears to be well worth perpetuating, if, as would probably be the case, plants from cuttings would assume the same habit.



HELIANTHUS GLOBOSUS FISTULOSUS.

— THE *Effect of Transplantation in averting Damage by Frost* has been well illustrated by a case which occurred at Feltham, where a quarter of an acre of ground was sown last spring with scarlet Queen Stock, with the intention that the plants, duly thinned, should remain to flower. The thinnings were planted out during the summer upon the ground close by, and grew into strong plants, though not so large as those that remained in the seed-bed. Over three-fourths of the untransplanted ones are now entirely killed, whilst of those transplanted scarcely one is injured.

— IN Paris, different kinds of *Leaves are extensively used for Garnishing Purposes*. They consist of Ferns, Chestnuts, Lilacs, Maples, Nuts, Elms, Poplars, and especially of the Vine, and are used for decorative purposes, garnishing dishes, and the like. Large quantities of Bramble-leaves are also used, in spite of their prickles, during the winter season, when they are still to be found in the woods near Paris. The leaves are collected into little packets, slightly pressed, and sold by hundreds of thousands in the markets.

— I FIND, writes Mr. Johnson, of the Belfast Botanic Garden, *Lupinus arboreus* to be one of the best of *Sea-side shrubs*. In some ground-work which I had in hand, on rocks that formed a small promontory, I found it to be necessary to undulate the ground in order to secure protection for many plants, but *Lupinus arboreus* made good growth, produced its golden flowers in abundance, and firmly withstood the keenest blasts of the elements in the most exposed positions. It likewise produced seeds, and hundreds of plants came up around, without any other care but that of letting them alone.

— THE *Times* states, in reference to *Toughened Glass*, that when glass is heated to redness, and kept at that temperature for a considerable time, its physical properties are changed in a remarkable manner; it becomes opaque or feebly translucent, much harder and tougher, and somewhat like porcelain in appearance. This change is termed 'devitrification.' M. Siemens has now discovered that when glass is heated to redness and then cooled or annealed in oil, its toughness is greatly increased, or, what is equivalent, its fragility is greatly diminished, while its transparency remains the same. Now that glass is so much used in gardens, this may prove an important discovery for horticulturists.

— THE value of *Peruvian Guano* as a manure is well known, and whether employed in the dry or liquid state, there are scarcely any fruits, flowers, or vegetables to which it may not be beneficially applied, if used with proper caution. One ounce per square yard will form a safe and highly beneficial dressing to all kitchen-garden crops, as well as to grass lawns, the greenness and vigour of which it will greatly improve if applied (mixed with fine soil) in moist weather about May. Flowering plants are most benefited by it when their flower-buds are expanding. As a liquid manure for plants in the open ground, 1 oz. to a gallon of water is sufficient; for pot plants, $\frac{1}{2}$ oz. to the gallon. That sold by Mr. S. Hawley, of Forest Lane, and which is warranted genuine, has been highly spoken of. A trustworthy source whence to obtain manures of this sort is worth noting. It is supplied with full directions for use.

— THE great conservatory at Chatsworth is famous during the autumn and winter months for its grand display of *Epiphyllums* of the truncatum type. Numerous monstrous hanging baskets filled with these elegant plants are suspended from the rafters; and one side-bench, the entire length of the building, is almost wholly occupied by them. The baskets are probably a yard in diameter, and covered at top and bottom with the *Epiphyllum*, so that in the blooming season they are quite enveloped in flowers. Amongst the most striking varieties grown are *E. violaceum grandiflorum*, *E. Ruckerianum*, *E. spectabile superbum*, and *E. Bridgesianum*. The varieties of this species of *Epiphyllum* may be employed in numerous ways for decorative purposes. Thus at Knowsley we saw tufts worked on the *Pereskia*, ornamenting the roof of a plant stove. The masses of flower were very effective, while the *Pereskia*-stem was not at all prominent.

— THE following plan for obtaining *Early Forced Asparagus* is adopted by Mr. Tegg, in the gardens at Bearwood. In October, a deep bed, fenced with ordinary Hazel or Ash hurdles, is formed in an early vinery, and in this is placed a mass of fermenting material, such as leaves and dung, in about equal proportions; the bed is surfaced over with rotten dung, and planted with good roots so thickly that they overlap each other. A bottom-heat of from 50° to 55° is sufficient. To insure highly-flavoured produce, it is necessary that the temperature of the air be lowered as much as can be afforded, as soon as the stems fairly break through the soil. Three inches of soil, or thereabouts, is sufficient to produce shoots of a nice green colour.

— It is well known that *Early Winter Broccoli* often suffers severely from the effects of frost, and sometimes whole plantations become irremediably injured. One plan of preserving the Broccoli is to pull them up by the roots as soon as they turn-in ready for use, and to suspend them from the roof in an airy shed till wanted. By adopting this means they are preserved from injury from frost, or from rotting through exposure to heavy and continuous rains; and they remain fit for table use for eight or ten weeks.

— DURING the past autumn we saw at Blythefield a very remarkable illustration of the *Effect of Close Pruning* on the constitution of a plant, as compared with a free extension of growth. In one part of the pleasure-grounds was a Hornbeam hedge of considerable age, and about 8 ft. high, presenting the usual appearance of a hedge of this kind, the individual trees bearing a multitude of slender twigs. From some cause or other the end tree of this line of Hornbeams had been allowed to grow unmolested, and while the constantly pruned plants were no thicker than one's wrist, the freely grown tree was a fine umbrageous specimen with a stout trunk, and a head at least 40 ft. high. It formed a capital illustration of the truth, that constant repression is exhausting, and the accidental juxtaposition of the hedge and the tree, brought out strongly the different effects of the two systems of pruning.

— THE *Renanthera coccinea* growing in the Conservatory at Chatsworth has not been out of blossom for four years, and that the stems had blossomed abundantly the panicles (past and present) attached to them bear evidence. The plant has several stems, which grow up to a considerable height. It appears to have a decided preference for growing on Birch poles, and in the case referred to the roots have in consequence acquired great vigour.

— MR. BRÉHAUT remarks that his crop of early Potatos under glass has been completely saved by the use of newspapers spread over the haulm during the late severe weather, while that of his neighbours without this protection has been lost. The extent of defence afforded by *Paper Protectors* is almost unknown as yet. The newspapers were suffered to remain on during the succeeding sunshine, so as to avert sudden changes of temperature. Where additional protection is needed, it would be easy to paste together any convenient number of newspapers, and fold the edges over twine, (as a boy does for his kite), and these, suspended some inches above the others spread over the haulm, would enclose between the layers enough fixed air to protect anything.

— THE *Vriesia regina*, a fine Bromeliaceous plant, of which a figure is given in a recent number of the *Gardeners' Chronicle*, flowered for the first time in Europe last summer, in the Emperor of Austria's private garden at Vienna. Professor Morren, the learned investigator of the Bromeliaceæ, and whose collection of living plants is, we believe, the most numerous in point of species of any that now exists, regards this as being the same as Lemaire's *Vriesia Glaziouana*. The leaves are about 4 ft. in length and 7 in. broad, and the flower-stalk 7 ft. high, the flowers being arranged in two-ranked curved spikes, disposed in a branched panicle, and springing from the axis of rose-coloured bracts. The flowers are white, and have a strong perfume of jasmine. The plant is a native of Rio Janeiro, where it grows in the clefts of the rocks, flowering from October to December.

— SOME time since, Professor Karl Koch called attention to a New Variegated Plane (*Platanus orientalis Rosenthalii*), which he had seen in Mr. Rosenthal's Nursery in Vienna. "True," he says, "we have had a variegated Plane in cultivation for some years, but it is far inferior in point of beauty to the one in question, being of a permanently shrubby habit, and possibly belonging to *Platanus cuneata*, Willd., a species I found on my second trip to the Caucasus, in 1844, growing on the banks of rivers and rivulets on the south-eastern slopes. The unequally five-lobed leaves, too, remain small, barely attaining 4 in. in length; and the variegation consists of yellowish-white patches or stains, most abundant near the circumference. Of Rosenthal's Variegated Plane, which is a variety of the Oriental, only small, shrubby specimens were seen, but should it prove to retain its variegation in the adult stage, we have here one of the most beautiful ornamental trees imaginable. It has ample leaves, usually somewhat broader than long, its broadest diameter reaching about 10 in., whilst from the top of the petiole to the opposite extremity of the blade it is only about 7 in.; it has an abrupt base, each half of the blade forming a right angle with the petiole. The agreeably conspicuous yellowish-white markings cover by far the greater portion of the surface; but the white is interspersed with green streaks."

— VARIETIES of different kinds of fruit often get a bad name in consequence of adverse treatment, and this is the case with certain *Unpopular Grapes*,

such as the *White Nice* and *Raisin de Calabre*, both being robust growers, producing large bunches, but often of inferior quality. Mr. Johnston, of Glamis, in a note published in the *Gardeners' Chronicle*, relates the case of a proprietor who had been prejudiced against these Grapes by his friends, and gave his gardener orders to root them out, and fill their places with something more worthy. Instead of uprooting all at once, the gardener adopted the better plan of grafting, while he allowed the old Vines to carry their usual crop. On a special occasion, when his employer had several distinguished guests, he sent in a handsome cluster of the *Raisin de Calabre*, which was pronounced so excellent that the gardener had to be called to tell all about it, the proprietor supposing it was a new Grape. When the mystery was unveiled, the gardener got orders to retain every one of the old Vines. Owing to the very robust habit of these Vines, and the large bunches they bear, they must have the full benefit of a long summer by being forced early, and subjected to a tropical atmosphere in order to enable them to thoroughly mature their crops and wood. Circumstances being favourable, they will take on a finish equal to a Buckland Sweetwater, and are infinitely better in quality, as well as being excellent keepers. The Earl of Strathmore, who is quite a connoisseur in Grapes, pronounced the *White Nice*, grown at Glamis this season, where bunches weighing 14 lb. and 17 lb. respectively, coloured like gold, have been produced, to be excellent.

Obituary.

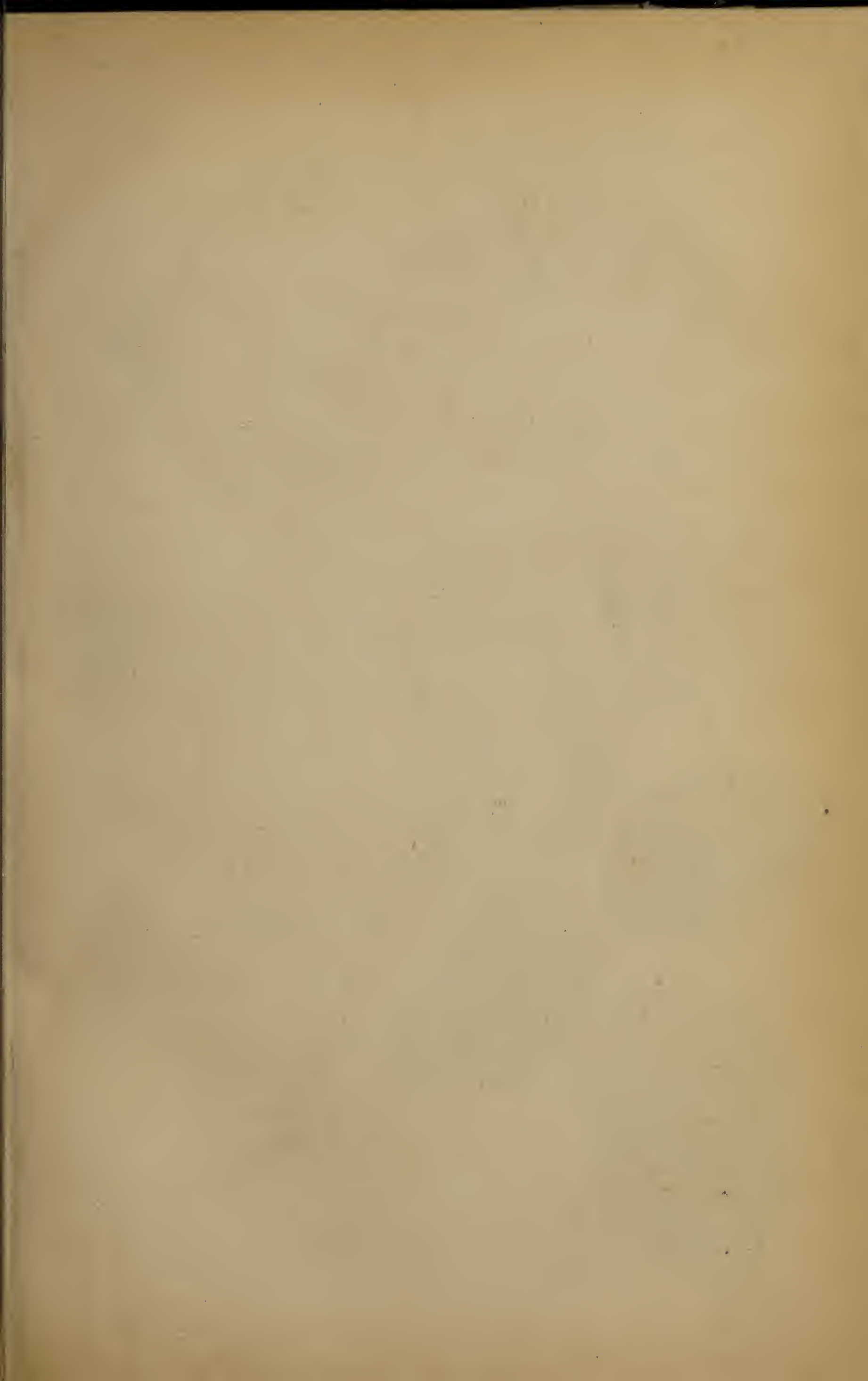
— **MR. THOMAS BURNETT**, gardener to Sir Sydney H. Waterlow, Fairside House, Highgate, died on January 15, aged 46 years. Mr. Burnett at an early age became head gardener at Ashby Court, Tiverton; he subsequently filled other prominent places, amongst them Lord Boston's, near Slough; Baynard's Park, Surrey; Downshire House, Roehampton; Peterborough House, Fulham, where in a short time he grew up as fine a collection of Orchids as has been seen round London for many years; and finally, was engaged at Fairside House.

— **MR. THOMAS WEAVER**, gardener to the Rev. The Warden, Winchester College, died suddenly on January 21, in his 72nd year. Mr. Weaver was thoroughly practical and most persevering in the attainment of general knowledge, as well as that which might be termed professional. Nearly half a century ago he was with the late Mr. Baxter at the Oxford Botanic Garden, and it is probable that while there he acquired a taste for British Botany, which to the end of his days was a source of great pleasure to him. His services were highly valued by the late and present Wardens, both of whom he had the honour of serving during the forty years and upwards in which he had charge of the College gardens.

— **MR. W. R. BRAGG**, of Slough, died on February 4, in his 70th year. Though apprenticed to the gardening profession, he soon gave it up, and eventually became a licensed victualler at Slough; but his early love for flowers remained, and he continued to be a successful cultivator of Pinks, Carnations and Picotees, Pansies, Dahlias, Hollyhocks, and Sweet Williams. In 1840 he won at Birmingham a £20 cup offered for Dahlias. He had of late years combined the business of florist with that of innkeeper, and was an occasional exhibitor at the London meetings. As one of the old school of floral enthusiasts, Mr. Bragg will be remembered by many as a genial fellow-worker.

— **MR. BENJAMIN FIELDERS** died at Enfield, after a short illness, on February 7, aged 82. Some thirty or forty years ago, when gardener to Mrs. W. Linwood, of Enfield, in whose service he remained for 25 years, he was a man of mark at the London shows, being a successful exhibitor of orchids, grapes, pines, &c. He subsequently entered the service of the late Mrs. Child, and the late Alderman Challis. He was a talented and to the last a devoted horticulturist.

— **LADY CULLUM**, of Hardwicke House, Bury St. Edmund's, died, rather suddenly, of paralysis, on February 17. She was a highly accomplished horticulturist, devoting on most days an hour or two to her garden. It is remarkable that her last act, in her garden, was to select a site for planting some Cypress-trees!





Rose Catherine Mermet.

TEA ROSE CATHERINE MERMET.

WITH AN ILLUSTRATION.

IN a recent election of Roses, CATHERINE MERMET—a figure of which is given on the accompanying plate—was placed by a large majority of electors amongst the best twelve Roses known; and that it is one of the very finest varieties we have, there can be no sort of doubt. Probably, if all the good qualities it possesses are taken into consideration, it will be acknowledged to be the best of all the Teas. It is large, of the finest form, constant, and floriferous. As a pot plant it is a good healthy grower, and makes sufficiently strong though not large wood. Probably it would be a more robust grower in the open, budded on the briar, which suits most Teas better than any other stock. Though the blooms vary more or less in depth of colour, the prevailing tint is flesh-coloured rose, with a dash of yellowish-buff, but this tint is not generally so deep as it appears in the illustration. On the whole, Catherine Mermet is, as the catalogues say, a “superb” Rose, and ought to be in the most choice collection.

There have been several fine additions to the tea-scented section within the last two or three years. The cream of these are probably comprised in the following:—*Amazon*, *Anna Ollivier*, *Catherine Mermet*, *Cheshunt Hybrid*, *Duchess of Edinburgh*, *Madame Bérard*, *Madame Camille*, and *Madame François Janin*. *Amazon* does not seem to be much known, but it is a good and distinct flower, with a long pointed bud, which opens well, and is fine bright clear yellow in colour. It is a good healthy grower as a pot rose, and flowers freely. *Anna Ollivier* is a first-rate flower, of good size; the petals are creamy-white, their base deep rose; it is most distinct and pleasing, and is a healthy grower. *Cheshunt Hybrid* and *Duchess of Edinburgh* are dark red Teas; the first has the better form, the Duchess is rather brighter in colour, but both are good and valuable additions to the Tea section. *Madame Bérard* may be shortly described as an improved *Gloire de Dijon*, which is not saying a little in her favour. *Madame Camille* is sometimes extremely fine, but it is a somewhat uncertain variety. If it could be always depended on, it would run Catherine Mermet very close.

Perhaps one of the most distinct new Tea Roses we have had for some time is *Madame F. Janin*, a small rose indeed, but most beautiful. In colour it is deep orange-yellow, inclined to coppery; in habit it is robust and healthy, and it is most floriferous. As a button-hole rose it is *facile princeps*.—R. B. POSTANS.

INFLUENCE OF THE SCION UPON THE STOCK.

TWO plants of *Abutilon Duc de Malakoff*, which were raised from seed, and had grown some 8 ft. or 9 ft. in height, were considered to be suitable stocks, to make into standards, for engrafting the weak-growing, pendulous *Abutilon vexillarium* [*mesapotamicum*] *igneum* upon. The grafts, which were put on at about 6 ft. from the ground, took readily, and some shoots were left on the

stock, in order to assist to draw up the sap until the grafts became more fully established, when it was intended to cut them away. Soon after growth commenced, however, some faint signs of variegation became apparent, and the shoots were allowed to remain. The result is, that the whole of the shoots which have broken out near to the grafts have become beautifully spotted, blotched and barred with yellow, the markings being similar to those which occur in the scion. The two forms growing together, and presenting such a wide contrast in the size and outline of their leaves, are very attractive and ornamental.

These plants have now been established for upwards of twelve months, and have formed good round heads. Plants treated in this manner will have a good effect through the summer and autumn months, either placed in sub-tropical beds, or used as single plants in sheltered places on the turf.—J. WEBSTER, *Gordon Castle.*

THE PREMATURE DROPPING OF PEACH AND NECTARINE BLOSSOMS.

THAT Peach and Nectarine blossoms not unfrequently fall prematurely will readily be admitted by most horticulturists who have had much to do with their culture under glass. It is not always easy, often very difficult, to account for this in a satisfactory manner. In trying to discover the causes, for there are many, we should never forget that, by placing Peach and Nectarine trees under glass, we remove them beyond the reach of natural phenomena necessary for their very existence, and that, consequently, their numerous wants must be artificially supplied, success or failure in their culture depending on whether this is intelligently done or otherwise. It is not my intention at present to enter into any lengthened details as to their general management, but simply and very shortly to point out what I believe to be some of the causes which lead to the premature dropping of Peach and Nectarine blossoms, and to suggest some remedies.

Much of the success of Peach and Nectarine culture depends on the formation of the border in which they are planted. In some favoured localities, where an open, dry subsoil exists, little requires to be done. Where, however, the subsoil is retentive, wet, and cold, or where oxide of iron or other poisonous ingredients abound, it is always safe to concrete about 3 ft. 6 in. deep. Allow a few inches of fall to the outside; place on the concrete parallel rows of 3-in. tile pipes, about 4 ft. asunder, connecting them with a drain outside the border, to run off the superfluous water; cover the concrete with about 6 in. of broken stones, brick-bats, clinkers, or similar material; place on these 2 ft. or 3 ft. of good hazelly turfy loam, mixed with half-inch bones, in the proportion of half a ton to an ordinary-sized peach-house—say about 30 ft. in length; and then you have a border which, if the general management is good, will not fail to set and mature heavy crops of fine fruit.

I would here remark that, when due attention has been paid to the selection

of the soil, and to the proper formation of the border, and when the general management has been good, the blossoms of Peaches and Nectarines are not liable to drop prematurely, after the trees get into a bearing state, until the soil becomes partially exhausted. When this occurs, artificial manures should be applied in a liquid state, in order to enable the trees to thoroughly swell and mature heavy crops of fruit, as well as to form and properly develop and mature the flower-buds for the following season.

Imperfectly ripened wood has much to do with the premature dropping of the flowers. This is brought about by numerous causes, such as imperfectly drained and consequently cold borders, the insufficient application of heat in the autumn, &c. Young trees for a few years after being planted in fresh soil, in consequence of their excessive vigour, require much attention in regulating and moderating their growth by judicious pinching, and should get sufficient heat to thoroughly ripen the young wood in the autumn. Inattention to this is the reason why flower-buds are so often weakly and small in size on the most robust and healthy young trees, and so often drop without setting their fruit.

Another frequent cause of this evil is allowing the trees during the summer or autumn to get too dry at the roots, or to be surrounded by too dry an atmosphere; in the latter case, the red-spider is sure to commence operations on the foliage, which they will soon destroy unless eradicated by the free use of sulphur and the syringe; while liberal waterings at the roots must also be given. I believe dryness at the roots has more to do with generating red-spider than all the other causes put together; for unless the foliage is preserved in full health till it ripens and falls naturally the flower-buds must be imperfectly matured, and consequently liable to drop without performing their proper functions.

Over-cropping, even where the vigour of the tree is very great, is one of the rocks ahead which amateurs not unfrequently come in contact with. One year may be marked by the appearance of an extraordinary crop, which they will not thin sufficiently; the prospects are wonderful about the time they are half-grown—friends are invited to come and see them, and great results freely talked about; but as they approach maturity less is said about them, as they prove to be alike deficient in size and flavour. The next year the crop is a failure, or nearly so, and dissatisfaction and disappointment follow. The remedy is simple: be content with moderate crops.

Bad or exhausted soil is another cause of the flowers falling prematurely. The Peach and Nectarine will doubtless thrive in a variety of soils. They often do very well in a light loam, a medium, or even a heavy loam, preferring a medium loam. However good the soil may originally have been, in course of time it becomes so far exhausted, that there is no possibility of producing first-class fruit without renewing or partly renewing the border. Artificial manures doubtless tend to prolong the period over which a border will last, and when judiciously applied assist largely in increasing the quantity of fruit a tree will mature. When the soil and subsoil are particularly favourable for the growth of Peach and Nectarine

trees, a very long period may intervene before the soil becomes exhausted ; but this is the exception, not the rule. In general, it will be advisable to renew the soil at the end of from twelve to eighteen years. It does not pay to grow fruit of any kind under glass unless skilfully managed, and one of the most important points is the border, which should always be kept in good order, otherwise success can only be partial, however well all the other conditions may be attended to.

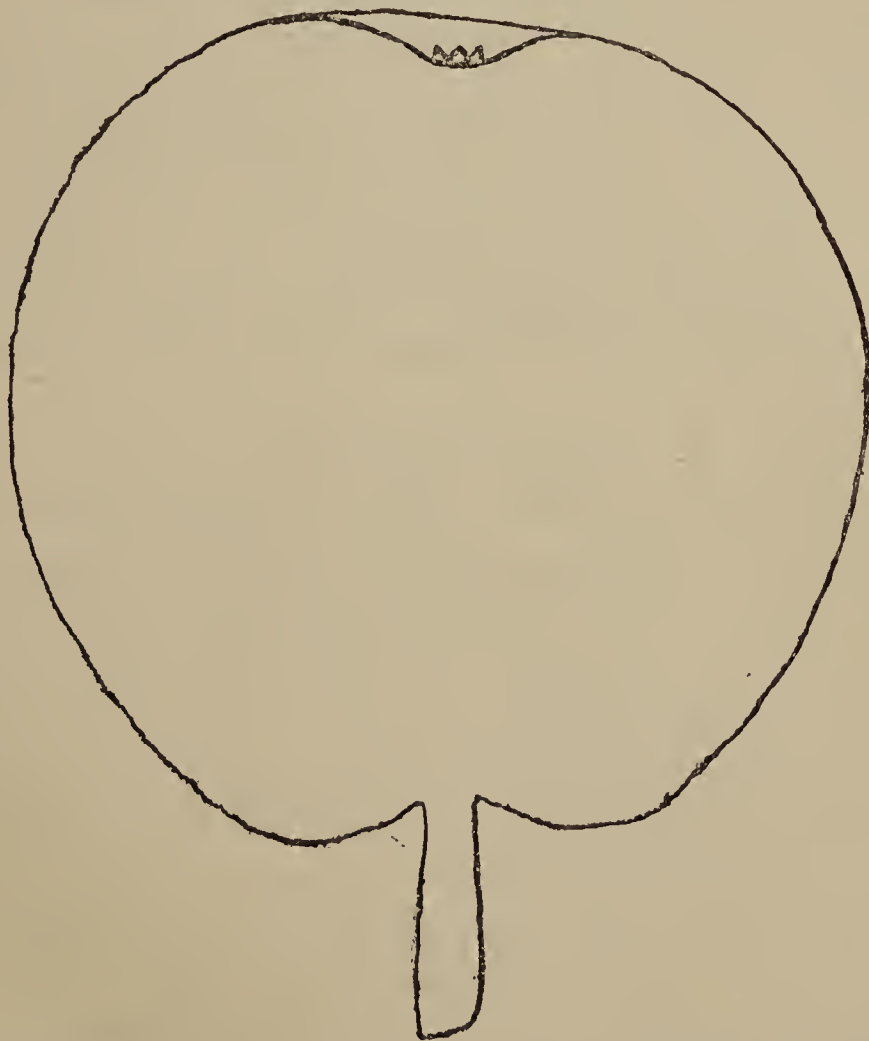
On a recent occasion I had to deal with a fine old Barrington Peach tree, which nearly occupied the roof of a good-sized house. For many years it set enormous quantities of fruit, which were always thinned so as to leave a large crop, but not beyond what the strength of the tree could thoroughly finish. For the last two years it has scarcely shown its former vigour, one side particularly being much less vigorous than the other. No gum or other unhealthy appearance is to be seen, on either the old or young wood ; indeed there is little difference to be observed from what it formerly was, with this exception that the last year's growths are not so strong and are much less plump than they have usually been—a condition most noticeable on the weaker side of the tree. Last year many of the flowers dropped without setting on this weak side ; this year they are doing the same, being very sparse and weak. Some time ago, I was induced to examine the roots on the side of the tree where the vigour had so much decreased, and I found them in a dark-coloured loam, many of them decayed, and altogether in a bad state. I had them cut back to where they were fresh ; the exhausted soil was renewed, and replaced with fine turfy loam, and I have no doubt the weak side of the tree will soon recover. The roots on the other side are in a fine hazelly loam, which is now somewhat exhausted, and will require to be renewed in a year or two, after the roots on the other side are fully established in the fresh soil. It will be observed that in this case, the dark-coloured and inferior loam became first exhausted, telling unfavourably on the health of the whole tree, but particularly on the side where it was placed. Artificial manures were in this case applied, but they could no longer sustain the vigour of the tree.

I give this illustration to show how much Peach and Nectarine trees grown under glass are dependent on the soil in which they are planted being healthy, as otherwise no skill will induce them to produce large crops of fine fruit ; and no wonder, considering the weight of fruit that a full-sized tree will carry for years in succession, so long as the proper food under favourable conditions is placed within its reach.

Inattention to properly ventilating Peach-houses when the trees are in flower, as also wet dark cloudy weather, often prevents their setting freely, even when the flowers are fully matured. This can be remedied to a large extent by using as much fire-heat daily as will dry the atmosphere of the house, and allow of a moderate amount of ventilation, sufficient to cause a free circulation of air around the trees.

Peach and Nectarine trees should not be tied to a stiff trellis, connected every few feet with the roof or back wall, but should have the trellis so fitted up as only to be connected with the top and bottom of the roof or back wall, and at the ends. The result is a trellis that when 'struck' will freely vibrate, shaking every flower, and dispersing the pollen very much in the same way as a breeze of wind does when it strikes a tree growing in its natural state out-of-doors.

On the other hand, Peach and Nectarine flowers often hang too long without falling. They appear to have performed their functions; the embryo fruit begins to swell, but makes little progress; the flowers remain attached to the fruit for weeks in succession; many of the fruits indeed grow to be as large as peas, and not a few considerably larger, but drop off or cease swelling long before the stoning process commences. Some varieties are more liable to this than others, but I presume imperfect impregnation is the principal, if not the only cause; and therefore, considering their artificial position, every means should be used to enable them to perform this important function.—ARCHIBALD FOWLER, *Castle Kennedy, Stranraer.*



GROOM'S PRINCESS ROYAL, *alias* MATTHEWS' ELIZA PEAR.

SOME years back, a friend who is a good judge of fruit sent me some scions of this Pear, which I grafted on an established standard, but I paid little heed of the circumstance until I found them bearing excellent fruit along with other kinds on the same tree. Except in one instance, I have not

seen the *Eliza* Pear noticed in catalogues, and therefore I conclude it is not so well known as it deserves to be. The *Eliza* Pear [also called *Groom's Princess Royal*] resembles the Easter Beurré in size and shape, with a similar shank, but a rather closer eye or crown. The prevailing colour is greenish-gray, without russet on the sunny side. In flavour, the *Eliza* excels the Easter Beurré. It ripens about the middle or end of January, when some of the late kinds of Pears, though highly spoken of, are often dry and corky, and remain so until they decay; but after several seasons' trial, I have never found the *Eliza* to be so. Consequently, be it old or new, it is worthy of notice, in consequence of its being so hardy and productive in situations where the most of the late good kinds of Pears would be worthless.

The drawing shows the usual size of the fruit as it grows here, from the top of a standard tree about 16 ft. high.—J. WIGHTON, *Cossey Park*.

DENDROBIUM DEVONIANUM.

AMONGST the many fine Orchids we now have in cultivation, there are few, if any, that surpass this, if we take into account its elegant drooping habit, its exquisite combination of colour, the wonderful moss-like fringe that margins the labellum of the flower, and its agreeably aromatic perfume. Altogether it is one of the most desirable of plants, yet, somehow or other, even amongst collections of Orchids that are generally well grown, this is rarely met with in good condition. Very often, like numbers of other plants of this singular family, it appears to do well for a time, and then, without any apparent cause, gets into bad health, and ultimately dies out. This, I think, is traceable more to defects in its management than to any peculiar delicacy of constitution.

This *Dendrobium Devonianum* is found indigenous in the comparatively cool, but very moist district of Khoseea. Now when plants from such a climate as this are submitted to the strong heat in which the *Vandas*, *Saccolabiums*, and other denizens of hot, low countries are grown, they go on for a time, until their constitution becomes so impaired by over-excitement that they die of sheer exhaustion. That such treatment has been and yet is the cause of this and many other fine things getting the character of being difficult to manage, I have no doubt; whereas if they met with more rational usage there would be no difficulty in managing them satisfactorily. It is a plant that cannot bear to have too much root-room, yet it does not generally succeed well on a block of wood, which apparently does not afford it enough sustenance.

I find a moderate-sized pot, well drained, with a mixture of the best fibrous peat, all the earthy particles of which have been sifted out, and one-fourth small lumps of charcoal, with a little sphagnum added to it, to grow the plant well; but, as will be seen by what I have already said, I look more to the temperature in which it is grown than to the material in which it is potted. The house in which I have grown it was occupied by *Cattleyas*, *Laelias*, and similar plants, that did not receive through the growing season a higher temperature in the night

than 60° or 65°, unless when the weather was such as to raise it above this, with a day heat as near 70° to 75° as could be maintained, giving it plenty of water. In the winter it was kept in the same house, where the night temperature was 50°, or often a degree or two lower, not giving the plant a drop of water for four months, or until it began to grow, when just enough was given for about six weeks to slightly damp the material in which the roots were, after which more was applied, to assist both growth and flower.

But to succeed with it, there are several other matters that must be scrupulously attended to. First, the leaves whilst young, and as they are formed all through the growing season, must never, even for an hour, be exposed to the sun; their thin delicate texture cannot bear it. For this reason I always had two or three wire bows fixed to the pot, over the young growth, on which was kept continually a piece of thin scrim, in addition to the usual scrim blinds which were in use on the house. Again, the leaves cannot bear the fumes of tobacco, consequently, whenever the house was fumigated, the plants of this Dendrobe, with a few other things equally impatient of tobacco-smoke, were always removed. The plant is also very liable to be attacked by the yellow thrips, so injurious to orchids, getting into the young leaves, and if left undisturbed even for a short time, it will quickly destroy the leading leaves, after which the bulbs will not make further progress. To keep this insect down, I used every morning through the growing season to syringe some water right into the apex, which was a sure preventive. By this means, I have grown a plant on for a score of years, it getting each year stronger, so much so that latterly it frequently pushed four flowers at a joint, and over sixty from a single stem.—T. BAINES, *Southgate, N.*

LATE PEARS.

MR. SAUL'S list of new late Pears (p. 36) must be very valuable to many Pear-growers, especially in those cases where a supply is wanted for the dessert till the latest possible period. There are generally so many of the fine late autumn sorts planted, that others which would keep up a succession through the winter and spring months are apt to be neglected. I have grown some of the new late varieties described by Mr. Saul, and can endorse what he says about their habits and late-keeping qualities. In addition, I have grown some new late sorts not mentioned by him, which, I believe, will be found acquisitions, namely:—*Madame Millet*, a handsome delicious melting late Pear, of the shape of Easter Beurré, and requiring a wall in a cold climate; *Reine des Tardives*, a medium-sized melting variety, also requiring a wall, and keeping well till May; *Doyenné d'Alençon*, a delicious melting late Pear, which grows well as a bush or pyramid on the quince stock, and is in season from February till May.

Amongst late Pears better known, *Joséphine de Malines* is a variety of a delicious flavour; its season is from January till April, and it bears well as a bush on the quince stock. *Hacon's Incomparable*, a large round variety, is very good

and melting this season with me ; its season being from February till March. *Ne plus Meuris*, although an ugly-looking sort, keeps well till March and April, and is then a valuable melting Pear. *Susette de Bavay* is a remarkably great bearer on the Pear stock, and is worthy of a wall, for its late-keeping qualities and good flavour. The old favourite, *Beurré Rance*, is not planted so much as it ought to be for its size and flavour, and for keeping, as it often does, to May and June. *Léon le Clerc de Laval* is the very latest sort with me, but it is often not melting ; I have specimens of it in the fruit-room here of the growth of 1873, and they are yet as hard as stones. Of that valuable late culinary Apple, the *Alfriston*, I have likewise of the same season's growth some specimens left, quite good, and fit for use. The *French Crab* is another Apple that keeps quite sound for two years in a good fruit-room.—WILLIAM TILLERY, *Welbeck*.

FUCHSIA CORYMBIFLORA.

THIS grand old late summer-flowering species, with its noble foliage, bold growth, and large and striking corymbs of drooping flowers, is so well worthy of general cultivation, and is so handsome as a conservatory plant during the autumn months, that it is a real pity it is so little grown. This, and the equally useful, though less aristocratic-looking, *Fuchsia fulgens*, have had to give place to the florists' varieties, as they are termed, and it is unfortunate in many respects that it is so, as they are each of them a marked instance of individuality of character. I have bloomed in my greenhouse a plant of a pale-coloured form of *F. corymbiflora*, named *virginialis*, in which the tube is almost white, the sepals deep pink, and the corolla rich deep carmine. The corymb of flowers which was put forth at the extremity of my plant remained in bloom for a considerable period in autumn, the flowers hanging down in a graceful manner. From around the base of the flower-stem sprang three shoots, about 15 in. in length, and each of these, throwing out a corymb of flowers at its extremity, kept up the blooming period until Christmas.

F. corymbiflora should not be over-potted, and this holds good also of *F. fulgens*. Both species appear to like to fill their pots with roots, and then they grow and flower profusely. If over-potted, a period of stagnation sets in during a considerable part of the summer, the energies of the plant are employed in root-growth, and when leaf-growth commences a good part of the flowering season has passed away. I shift my plant in the spring, just when it commences to make growth, disturbing as little of the roots as possible, and using the next size larger pot. It should not be in too rich a soil. This holds good of many of the common varieties of the *Fuchsia*, but it is particularly true of *F. corymbiflora*. Some good fibry yellow loam, some leaf-mould, a little manure, and some sand, make an excellent compost. A little very weak manure-water can be given when the plants are in flower. I may add that *F. fulgens* (growing in a pot that is a mass of roots) bloomed continuously in terminal corymbs all the summer. I gave it an abundance of water in drying weather.—R. DEAN.

GARDEN WORK FOR APRIL.

FLOWERS.

DURING to the unpropitious state of the weather during the early months of the year, spring-flowering plants are considerably retarded; nevertheless, the prospects of a rich display is most assuring, as the plants have not suffered. Even that somewhat miffy subject, *Myosotis dissitiflora*, which is so effective in spring arrangements, has not suffered in the slightest degree. Plant out *Phloxes* and *Pentstemons* into beds and borders previously enriched with fresh compost, and divide and replant into lines and patterns such plants as *Cerastiums*, *Dactylis*, *Veronica incana*, *Euonymus radicans variegatus*, *Stachys lanata*, *Santolina incana*, *Sempervivum californicum* [*calcaratum*], *Echeveria secunda glauca*, &c. The latter two are much in vogue for dressing the outlines of carpet-beds, stuck formally into the raised edges. If such stiff bands are admissible in such positions at all, they should most assuredly be so disposed as to cover the soil. That sweetly effective hardy plant, *Stellaria graminea aurea*, which is so chaste in combined arrangements with *Alternantheras*, should now be divided, and planted either where it is to remain, or in small portions 2 in. apart, in light soil, upon a border, for future transplanting. Sow seeds of ornamental *Beet* in beds or border-lines where it is to remain; Dickson's or Dell's are the most effective strains of this that I have seen. *Violets* as they have done blooming should be at once lifted and replanted, choosing the young growths, which are much the best for this purpose; the ground should have been previously prepared, by working-in fresh turfy loam and manure. They delight in a situation shaded from direct sunshine, such as a north border. *Hardy Perennials* and *Alpine Plants* upon rock-work will be now very interesting, and should have attention, in filling up vacancies, and planting out tender sorts wintered in frames. Fork the surface-soil lightly amongst herbaceous plants, surface-dressing with fresh soil, which is preferable at all times to deep digging, as these subjects do not flower satisfactorily when the roots are ruthlessly disturbed. *Annuals* should now be sown. Where the soil is heavy and rough, it is best to cover with fine soil prepared for the purpose, as many seeds are so delicate as to germinate very imperfectly in stiff soil. Many of the stronger-growing annuals are suitable for covering the bare ground in front of and amongst newly planted shrubs, producing a very pleasing effect. Amongst these are *Amaranthus atropurpureus*, *caudatus*, and *hypochondriacus*, *Atriplex hortensis rubra*, *Chrysanthemums*, *Daturas*, *Gaillardias*, *Lupines*, *Malopes*, *Mignonette*, *Oenotheras*, and many others which possess a free habit of growth. Transplant *Evergreens* now that the sap is active. Cut box edgings, and keep grass closely mown.

Conservatories: Amongst plants in bloom, *Roses* will now occupy a prominent position; they deserve every attention, to keep under the insects, which will now be hard at work, quickly destroying the fresh verdure of the foliage when allowed to multiply during the earlier stages of growth. As plants in pots have such a limited area from which to draw support, it becomes necessary to sustain them with constant doses of weak liquid manure, more particularly when they are growing freely. Those plants which have done blooming must be hardened off, guarding against sudden checks, which act so adversely to the ripening of the wood. Cut closely back such subjects as *Prunus*, *Amygdalus*, *Double Cerasus*, *Deutzia*, *Cytisus*, &c., which have been forced, and place them in a genial temperature to break, when they should be examined and fresh potted. Whilst it becomes

most essential to subdue the direct action of the sun in these structures at this period of the year, it is, upon the other hand, necessary to guard against over-shading, as it acts prejudicially in weakening tender vegetation.

Stoves: Such plants as *Eucharis amazonica*, which are gross feeders, should be kept in a brisk temperature when in active growth, and abundantly supplied with water. Keep such plants as *Dracenas*, *Crotons*, *Æschynanthus*, *Pandanus*, *Gardenias*, *Francisceas*, &c., which are now growing freely, near to the glass, and guard against over-shading, as many plants of this nature are utterly spoiled by being kept in darkness. As a general rule, they require all the light possible, whilst *Alocasias*, *Marantas*, and similar under-growth plants, should always be shaded from direct sunshine. Place *Poinsettias* in heat to produce cuttings; such as are intended to be cut down to break afresh for potting on, will be early enough in May, and as space is an object just now, there is no necessity to start them sooner. Climbers such as *Dipladenia*, *Stephanotis*, &c., when growing freely, should be suspended near to the glass upon bands, in which position they make finer growth than they do when formally laced to trellises, upon which they may be trained as soon as they show bloom. Shift on growing stock as they require it, and guard against over-watering, admitting air cautiously, so as to prevent cold currents, and promoting a brisk, humid atmosphere.

Greenhouse: The *Lapagerias* will now require an abundance of water; in fact, it is difficult to overdo them in this respect, when they are in active growth, so long as the drainage is efficient; they do best in a perfectly cool atmosphere, which should be somewhat shaded. They should be planted out in a porous material, consisting of two parts fibry peat to one of turfy loam, which should be kept open by a free admixture of brick rubble and charcoal with sand. Growing stock must be encouraged by shutting up early and damping every available surface, admitting air early in the morning; but for the present, while growth is tender, cold currents must not be permitted, as they stultify vigorous growth. See that the plants are so placed that they receive the full benefit of light. Attend to the ultimate symmetry of the plants, by pinching back or tying down any wayward shoots; it is only by strict attention to this while they are young, that well-furnished plants can be attained.

Orchids will now require shading during bright sunshine, for which purpose a thin material should be used. As a general rule, light is too much excluded, and I would recommend that the roller be elevated about 4 in. clear of the glass, upon laths, so as to admit a free circulation of air between the blind and glass. This has been practised by Messrs. Veitch of Chelsea with the most satisfactory results. The general potting of these plants will now be completed. *Calanthes*, which are so useful for autumn and winter flowering, should now be potted, using well-drained pots, and fibry loam freely mixed with dried cow-dung, sand, and charcoal; water very sparingly till they make fresh growth. As plants are now in an active state, they must be freely supplied with water at the root, and atmospheric humidity must be promoted by frequently sprinkling every available surface.

Ferns will now be growing freely, and will require every encouragement, such as abundant watering and shading from sun, while the stems of tree-ferns should be freely syringed.

Bedding-plants: Propagation must now be pushed forward with despatch. *Lobelias*, which are so much used in carpet-beds, must be had in quantities; the dwarf-growing varieties, such as *Lustrous*, *Pumila grandiflora*, &c., are freely produced from divisions, if planted in light soil in boxes. The double-dwarf kind cannot be relied upon for bedding purposes, being so uncertain in its blooming. Of the stronger-growing kinds there are various strains of *Speciosa*, which is still the

best for general purposes; a variety of this, *Mazarine Gem*, is deserving of notice as being richly coloured, and *L. nivea* is the best white. Several of the *Abutilons* are most effective for massing; interspersed amongst dark-leafage plants, they produce relief by pleasing contrast; the best is *A. maculatum niveum aureum* (which, I think, is known as *A. marmoratum*), *A. Thompsoni*, and the dwarf-growing *A. vexillarium variegatum*, which forms an effective ground-work amongst tall plants. Gradually harden off under temporary protection the hardier kinds that are thoroughly established, to bear full exposure during mild weather, plunging the pots in spent tan or other light materials, so as to economise attention in watering, and at the same time guard against cold cutting winds. Pot off cuttings as soon as rooted, and prick off seedlings of all kinds, so as to prevent drawing. Divide and start the tubers of *Cannas*; sow seeds of *Stocks*, *Asters*, *Marigolds*, *Zinnias*, *Everlastings*, and other *Half-hardy Annuals*, and start them in a mild heat.—GEO. WESTLAND, *Witley Court*.

FRUITS.

Vines: Where the fruit is beginning to colour, syringing must be discontinued; attend to previous directions in regard to temperature, air, &c. Commence thinning the berries in the succession-houses at an early stage after they are set, and keep the shoots tied in and the lateral shoots stopped. Water the inside borders, and maintain a moist atmosphere during the time the fruit is swelling. Close early in the afternoon, to economise sun-heat. *Vines in pots* must not at any time suffer from drought; water them liberally with liquid manure, but be careful not to apply it too strong, or it may injure the young feeders. Young Vines that are intended for fruiting next year should be shifted as they may require it; in potting them use rough turfy loam mixed with sheep-droppings.

Peaches and Nectarines: Go on with the disbudding in the succession-houses, and tie in and regulate the shoots of those farther advanced; select for next year those of moderate growth. Stop the shoots above the fruit, with the exception of those that are destined for leading branches. Continue to thin the fruit as they may require it; this must be entirely regulated by the condition of the trees, as double the number may be retained on a vigorous tree as compared with one in a weakly condition. Do not hurry the fruit during the process of stoning; a night temperature of about 60° will be sufficient at this stage. Keep the foliage clean and healthy; water the inside borders; syringe, and make the most of sun-heat at closing-time.

Pines: Those in fruit require a temperature of about 80°, with an increase of 10° during sunshine; water freely, syringe the plants when the house is closed in the afternoon, to keep up the requisite moisture. Attend to the linings of those growing in dung-pits. Water the plants if dry; and if any were not shifted last month, no time should be lost in getting them repotted, using a mixture of free turfy loam and rotten manure; do not press the soil too firmly in the pots; syringe these plants if the weather is fine, but do not give much water at the root, till they begin to grow, and avoid a current of air through the pit.

Figs: Pinch out the points of the young growth, and keep the shoots from being overcrowded; mulch old trees with rotten manure, and water the borders, increase the night temperature in the early house, but do not allow it to exceed 65°, with a rise of 10° through the day; syringe the trees at closing-time. Those in pots should be well supplied with water till the fruit is ripening.

Cherries: Keep the trees well syringed while the fruit is swelling; give also plenty of water at the root. When the fruit has stoned, and is beginning to

colour, less moisture will be needed, and the night temperature may be increased with safety, but give plenty of air through the day. Keep strict watch for black-fly, and destroy them by dipping the points of the shoots in tobacco-water.

Strawberries: See previous directions. Introduce the last lot of plants under glass.

Melons: Keep the linings turned or renewed, and still continue to cover the frames every cold night, except where fire-heat is used. Keep the shoots thin by cutting away useless growth. Give more air and water in proportion to the increase of heat and light, and avoid shading if possible. Sow again early in the month.

Hardy Fruit: Presuming that all pruning, nailing, planting, &c., was brought to a close last month, very little remains to be done in this department for the present. Still continue to cover *Peaches* and *Apricots* whenever frosty nights appear likely to occur, but remove the covering in the day-time if the material used is of a close texture. If green-fly should attack the Peach trees, destroy them on their first appearance; common snuff and sulphur, in equal parts, is perhaps the best remedy at this early season, as it would be injurious to the young fruit to use a wash strong enough to kill the fly, though next month it may be done with safety. Encourage all the foliage possible, and do not be too much in a hurry to disbud the trees till the weather becomes warm and settled. Plant *Strawberries*, and keep the ground hoed among the growing plants; keep down the young crop of weeds in the fruiting beds, and prepare for mulching the plants with manure or litter. Give plenty of air and water to *Orchard-house trees*, keeping the foliage healthy by checking the ravages of aphides, and syringing the trees frequently.—JOHN POWELL, *Frogmore*.

VEGETABLES.

Closely inspect the seed-bed of each crop sown, and ascertain beyond question that the seeds are germinating and making satisfactory progress, in view of the ultimate supplies. In all instances where there exists any doubt of this, set to work without hesitation or delay to make duplicate sowings, as it is far better to do so, than to run the risk of missing even any single crop. Many subjects, among the ordinary spring and summer vegetables, will need carefully moulding up, but this should be done with some consideration. The practice is calculated, in some measure, to ward off the colder winds, and to encourage all the possible superficial root-action; but it is not necessary nor judicious to unduly bury the base of any plant, in furtherance of the necessary practice. The soil should be drawn up so as to form an acute ridge on either side of but not close up to the stem.

Successional sowings must be made of main-crop *Peas*, *Broad Beans*, &c. An early sowing may also be made towards the end of the month of *Scarlet Runners*, and, perhaps, a small one of *Dwarf Kidney Beans*—the latter more as a chance crop, should no mid-day frosts occur, than as likely to secure a permanent one. The former stands a far better chance, as even should a severe frost come and cut them down as soon as they have germinated and are well through the ground, a permanent injury will not result, as they will speedily form duplicate shoots, which, pushing through the ground quickly, will form excellent crops at the usual time. The exceptional sowings, to be made a few days after the middle of the month, should consist of:—*Cabbages* (Early York, or Atkins's Matchless, and a pinch of the Rosette Colewort), *Broccoli* (Snow's Winter White, or Walcheren, Grange's, and the Edmonton), *Cauliflower* (Veitch's Autumn Giant, which should be grown by all), *Scotch Kale*, *Cottager's Kale*, *Brussels Sprouts*,





Lettuce of approved Cabbage and White Cos kinds, *Parsley*, and an early bit of *Beet* for immediate autumnal use. *Radishes* must be sown according to fancy, or need; do not, however, sow the new Californian Radish at this time, nor until the summer is fairly passing, or it is more than likely that the crop will run to seed, instead of forming its fleshy base. *Herbs* and all smaller seeds must be sown towards the end of the month upon finely raked rich soil, and in warm sunny situations.

Maintain a nice genial warmth of 70° to *Cucumbers*; give all the air possible whenever the outer air is temperate and "soft;" shut up the house or frame close towards 3 o'clock, and well bathe the plants and all internal surfaces with tepid water, again giving a little air at the apex or along the back towards 6 p.m. Encourage growth at all times, but do not over-crop at any. When a rapid growth is commenced, aid its onward progress with weak waterings of liquid manure. Particularly attend to insect-pests in regard to these plants, occasionally fumigating the structure as a preventive.—WILLIAM EARLEY, *Valentines*.

LUCY GRIEVE PEAR.

WITH AN ILLUSTRATION.

 F we cannot claim for Old England the parentage of many of our favourite Pears, we may at least assign to her some of the very best in quality, and among these must rank the subject of our present illustration, of which excellent samples were sent to us last autumn by Mr. Grieve, of Culford.

Its history is comprised in the following lines, also communicated by Mr. Grieve:—

It happened very long ago—
How long? we scarcely seem to know—
A fair young child, in joyous glee,
Pluck'd with her daring little hand
A ripe Pear from a tree;
And ate the mellow fruit she chos
With all the zest which childhood knows,
But marvelled in its inmost core
Some dark brown pips to see;
And marvelled more to hear it told
That each small pip, so plump and bold,
Might yet become a tree.
Then thoughtfully she pondered long
How this thing could be so,
And lastly in a pot of earth
A tiny seed did sow.
That seed became a living plant,
And claimed her willing care,

While promises were kindly made
With friends its fruit to share.
In time the plant became a tree,
With foliage bright and fair;
Tho child a merry little maid,
In favour everywhere.
Affection cherished still the tree,
Which cold and storm could brave,
But long before it bore a fruit,
The maid was in her grave.
And when at last it ripened fruit,
They who full well do know,
Declare on England's fertile soil
No richer e'er did grow;
And say how that a fruit so choice,
Its raiser's name should bear,
And be hereafter always known
As little LUCY's Pear.

As will be seen from our figure, this variety is remarkable for its long narrow willow-like leaves, which give the tree a peculiar appearance. The fruit is full medium size, oblong pyriform, broadest just above the middle, its average weight exceeding 7 oz. The stalk is over half-an-inch in length, set in a very shallow depression, the sides of which are slightly unequal; the eye is closed, and set in a shallow even cavity. The colour is a clear deep lemon-yellow, thinly marked with russet dots, and having a small russet patch about the eye and the stalk. The flesh is moderately firm, fine-grained, tender and melting, very juicy, with a rich luscious flavour, and a slight and agreeable dash of acidity, such as is occasionally met with in the Glou Morceau. The odour of the fruit is penetrating and agreeable,

and its appearance something like that of an elongated Glou Morceau. A First-class Certificate was awarded to this fine new Pear by the Fruit Committee of the Royal Horticultural Society at its meeting of October 23 last. The specimens submitted to us were ripe and in excellent condition about the middle of October. —T. MOORE.

WISTARIA SINENSIS.

THIS is one of the finest of all trailing plants, if we except, as a matter of course, the ubiquitous Virginian Creeper, to which neither smoke nor dust seems in the least objectionable; and it is well worth a place in front of all town mansions where there is space to plant it, so that its roots can get plenty of moisture. Its flexible rope-like habit of growth enables one to train it in any direction, and whether hanging loosely and gracefully from balcony railings, or twined tastefully around portico pillars, it is always fresh and green during the summer, even if its deliciously perfumed grape-like clusters of pea-shaped flowers are never produced. Its foliage lasts until late in the autumn, and when contrasted with the deeper-toned Ivy, or with the rich and varied tints assumed by the Virginian Creeper towards the close of autumn, it is capable of producing some excellent effects. There is one way to obtain its clusters of mauve or lavender-tinted flowers not generally adopted, and well worth mention here. It often happens that it is trained on garden walls, near conservatories or other plant-houses, and if a few of its well-ripened branches are introduced through a hole in the wall or sash, and syringed occasionally, they soon throw out their flower-buds, and the flowers thus obtained come in very handy for cutting at a time much earlier than it flowers naturally out-of-doors, and the clusters are so elegant, so fragrant, and so distinct in colour, as to be universally admired.—F. W. BURBIDGE.

A WINTER GARDEN IN THE OPEN AIR.

THE Bedding-out system, as it is called, must certainly be admitted to be an exceedingly well-abused system, although everybody continues to practice it just the same. It is accused of banishing from our sight nearly all our former favourite spring and summer flowers, whose beauty and fragrance used to render our gardens just what they ought to be; it is said to have induced a meretricious taste for gaudy and glaring colours in flowers, to the exclusion of all that is simply beautiful and interesting; it is even said to prevent fruit-trees on garden-walls from being trained in the correct geometrical style that used formerly to prevail (see p. 17). But notwithstanding all that may be said against the massing or grouping of plants in the flower-garden, the system continues and will continue to be followed out.

The grouping together of plants is, after all, the very system which Nature, who never errs, adopts in their distribution. From the vegetable giants of California, &c., to the Lilies and pale Primroses of our woodland glades, all are found

associated in groups or masses, seldom as single or isolated specimens. It is scarcely logical or just to condemn the grouping or bedding-out system on account of the shortcomings of unskilful practitioners, who may occasionally employ greater breadths of the bright or primary colours than can be considered to accord with accepted notions or ideas of good taste. It will, I think, be difficult to substantiate the charge so frequently brought against this system, viz., that of excluding from the parterre our former favourite flowers, as possibly the finer or most ornamental species of hardy spring-flowering herbaceous plants were never more sought after and appreciated than they are at the present time. Even if some of the tall, coarse-growing *Asters*, *Solidagos*, &c., which were wont to disfigure our flower borders, are now at a discount, so much the better; and if the bedding-out system is to be accredited with this result, we ought to feel grateful towards it. For some time to come, at least, we shall probably continue to bed out our flower-gardens as heretofore, and each season it may be hoped will in this respect prove to be an advance on its predecessor as regards effect and tasteful arrangement.

We have also gardens for the culture of Spring flowers and Bulbs, Rose gardens, and gardens for Rhododendrons, and other American plants; and nothing need prevent us from having Winter Gardens in the open air—gardens wherein flowers (which are all but incompatible with a British winter) would, if not altogether excluded, play but an inconsiderable part.

A recent visit to the extensive nursery grounds of the Messrs. Barron, of Borrowash, near Derby, well known for their unrivalled collection of coniferous trees, &c., impressed me with an idea of the ease with which such a conception as that to which I am about to allude, could be developed, as I witnessed the vast amount and variety of material at command suited to this purpose, and the wondrous effect produced by many of the species of ornamental-foliaged plants, even while growing in the ordinary nursery-beds or lines, without of course any attempt at effective arrangement, but which sufficiently shadowed forth the pleasing effects which would be the result of working such material into the form of a winter garden or a garden of ornamental-foliaged evergreens.

Such a garden might, of course, be of any desired form and dimensions, so as to suit local circumstances and the character of the grounds, by which it might be surrounded, and of which it would necessarily form a part. It might also be laid out according to any desired style, but the more natural and simple the better. It should by all means be on grass, but at the same time so arranged that sound walks of dry gravel should lead to and afford ready access to all parts of it, walking upon grass being by no means always agreeable during winter.

Beds or groups should be formed of such plants as the various kinds of *Gold* and *Silver Variegated Hollies*, *Gold* and *Silver Yews*, with masses of light-coloured and variegated plants of various sorts, having for their background trees or shrubs with dark-coloured foliage, or in various ways agreeably contrasted with plants of a different shade of colour, such as the *Common* and *Irish Yews* and the neutral-tinted *Junipers*, *Cypresses*, &c. Such beds and clumps should be kept to the

desired form and dimensions by the skilful use of the knife, avoiding at the same time anything like undue formality; while single specimens of evergreen trees and shrubs of distinct and remarkable character, such as the *Variegated Pinaster*, *Abies Douglasii*, *Picea Pinsapo* and *P. nobilis*, *Cedrus Deodara*, *Hemlock Spruce*, *Libocedrus decurrens*, &c., should be planted in suitable situations, and be there allowed to assume their natural form and size. Tall specimens of the *Irish Yew*, on which might be grafted the *Taxus elegantissima*, or other golden-striped sorts, might also be introduced. These, although somewhat formal in appearance, produce a very remarkable and pleasing effect. Groups of such ornamental plants as have been mentioned, could also be margined with suitable hardy evergreens or variegated plants of lower growth, of which there are to be had a great variety, such as the various *Retinosporas*, *Variegated Savins*, *Mahonia Aquifolia*, *Euonymus japonicus*, *Hardy Winter-flowering Heaths*, *Cotoneasters*, *Daphnes*, *Bambusa Fortunei variegata*, *Golden-variegated Thyme*, with *Santolina incana*, *Cineraria maritima*, and *Cerastium tomentosum*, &c., for the sake of their silvery whiteness. The few flowering herbaceous plants which might be introduced would consist principally of patches of the *Christmas Rose*, *Winter Aconite*, &c.

With such materials at command, a unique and beautiful garden might, no doubt, be formed, which in winter would be at the height of its beauty, when the leafage of the various plants employed would be in a fully matured condition, and would be enjoyable at all times when the state of the weather would permit. It would also form a desirable and interesting feature in any garden establishment at any season of the year.—P. GRIEVE, *Culford, Bury St. Edmund's*.

FRUIT-CULTURE *versus* CREMATION.

I AM very much obliged to Mr. F. W. Burbidge for his criticism (p. 56). To use a modern phrase, this is literally a *burning* question; it is also a *grave* one, but after all it is one with which Horticulture has very little to do, and it will require neat handling to keep the subject from dropping into undesirable strata.

Let me ask Mr. F. W. B., if he approves of bones for a vine border, how he can object to the entire animal—bones, thews, sinews, and flesh—chopped fine, and mixed and deodorised with burnt clay, or dry earth? The stale fish of London has long ago found its way into the country; and there, after being mixed with burnt clay in a shed and undergoing disintegration and deoderisation, it has gone through the drill as native guano; but no one could honestly cry *Stinking fish* as farmer Dobson's manure-drill went up and down the fallow. The properties that go to make a manure-heap in a farmer's court-yard valuable, I had rather not discuss, but as "muck is the mother of money," let no one speak lightly of it, with all its failings. I have watched the progress of Horticulture from my youth, and was in at the birth of bones as a manure; and at the present time who would cry down the bones and offal of an old horse or other beast as manure, when properly managed?

Cremation may be poetic enough for a certain class who would "court the bubble reputation, even at the cannon's mouth." Hence we find Campbell giving Hope the power to grin:—

"Hope o'er the ruins and the wreck shall smile,
And light her torch at Nature's funeral pile."

The Martyrs—with reverence, be it said—suffered first a martyrdom, and after that Cremation:—

"From thy majestic altars the steadfast martyrs came,
To die for their Redeemer, in torture and in flame."

But even in Cremation it is not all gold that glitters, for withered hags suspected of witchcraft were burnt alive, and were of course cremated. We read of the bodies of Saul and his sons being buried, as well as burnt. The subject is, indeed, so vast that volumes might be filled with funereal obsequies and sepulchral solemnities, not to name the fate reserved for this fair Earth of ours,

“when at that dreadful turn,
The swarm shall issue, and the hive shall burn.”

The number of funerals at one cemetery here may be twenty or thirty a day, but were that number of bodies to be roasted, or rather burnt to cinders, the air would, indeed, want some of the rain Mr. F. W. B. refers to, to wash out its impurities. People could not live in such a neighbourhood, and the leeway of such a smoke would carry death in its track. The cutting vapour of the chemical works at St. Helen's and other places would be sweet when compared with the fumes of Cremation, so that we should pray that the blessed Earth might hide the horrid picture from our sight.—ALEX. FORSYTH, *Salford*.

* * * This question may after all some day affect horticulture more than Mr. Forsyth seems to imagine, when public opinion shall have been educated to look to the gardener or the nurseryman, rather than to the undertaker, to furnish from nature's stores the trappings of sepulture.

EUPHORBIA FULGENS, *alias* JACQUINIÆFLORA.

THE lovely representative of the natural order *Euphorbiaceæ*, commonly known as *Euphorbia jacquiniæflora*; but which, I presume, is more rightly named *Euphorbia fulgens*, is well known for its somewhat small-sized, deep scarlet, circular flowers, the size of which is, however, amply compensated by their brilliancy. The dense wreaths in which they are produced when well grown, are exceedingly beautiful. There may be one fact in regard to this lovely plant that is not so well known as its beauty, and it is to this (and to this only at the present time, though I hold a secret anent its culture that is worth one's birth-right) that I am anxious to draw the attention of the reader. This plant will withstand any degree of cold, down to 40°, or indeed 36° when in full bloom, and will show no symptoms of injury—that is, as regards the brightness of the blooms. If taken into a cool greenhouse, when once the flowers are opened, or only three-parts expanded, they open perfectly, and last thus for an incredible length of time in full beauty; whereas, as is well known, they soon go off in heat. This plant may also be stood out of doors during the whole summer, and will yet bloom freely in autumn.—WILLIAM EARLEY, *Valentines*.

NEW JAPANESE EVERGREEN OAKS.

ON the course of the last summer we received from Messrs. Ottolander and Son, of Boskoop, a series of leaves of new Evergreen Japanese Oaks which had been introduced to Europe by Siebold, and which were cultivated by them. Of these Oaks, which are especially valuable as being of ornamental character and presumably hardy in this country, some at least of them having proved to be so at Combe Wood, in Surrey, we now introduce outline figures, accompanied by Messrs. Ottolander's descriptions.

QUERCUS GLAUCA, of Thunberg.—This species is of bushy habit, with slightly hairy branches. The leaves are from 3 to 6 in. long, 2 in. wide, ovate-lanceolate acuminate, serrated near the point, glabrescent above, and clothed with silky down beneath. Of this Siebold introduced several varieties, as *Q. glauca Awokasi*

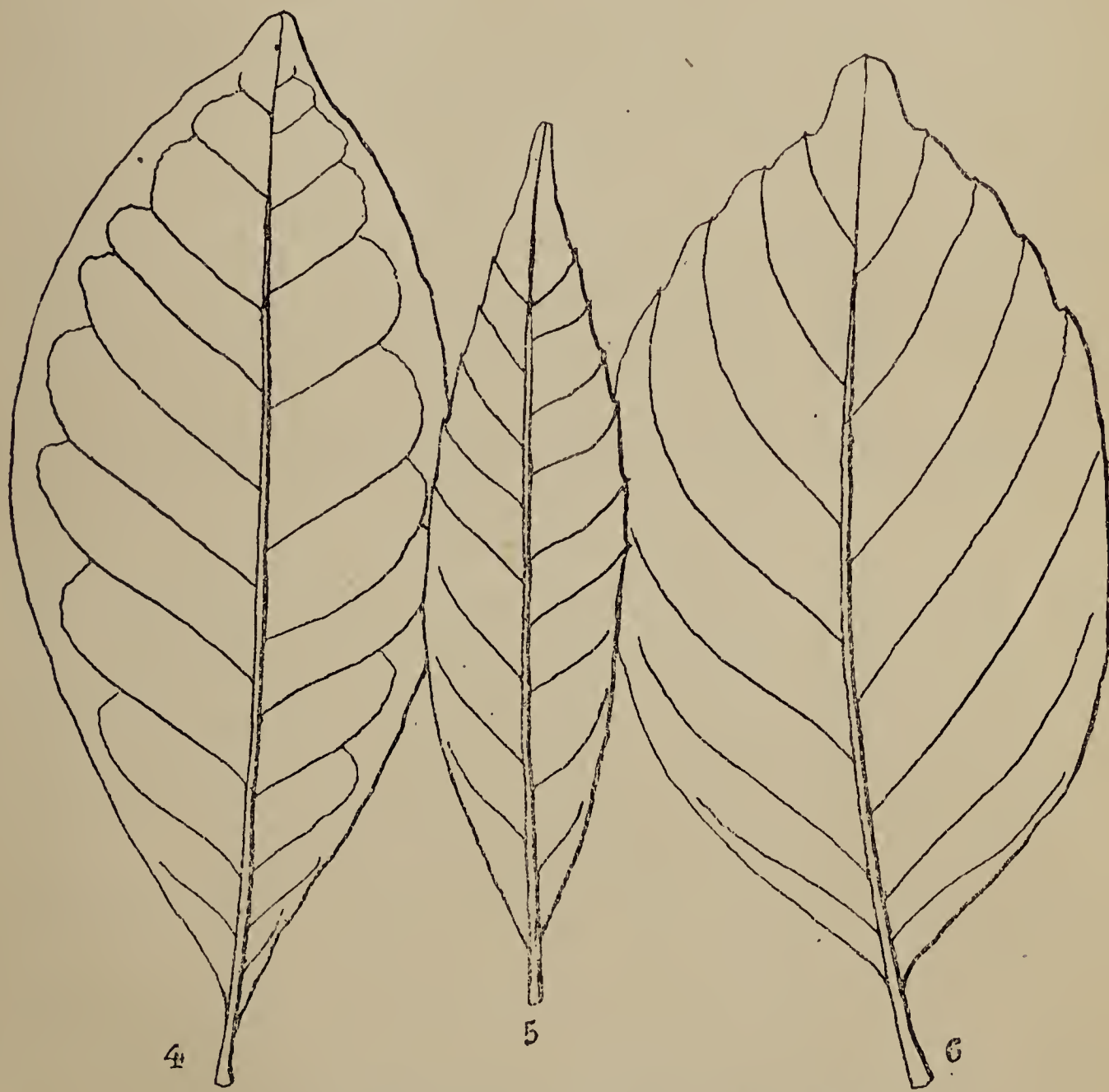
cæsia, with the leaves smaller and thinner, ovate-lanceolate, shining light green, the young leaves tinted with brown, sharply toothed from the middle to the



QUERCUS:—1, *glauca*; 2, *gillva*; 3, *acuta*.

apex.—*Q. glauca Tsikasi lapidea*, with the young shoots downy, green; leaves 3 to 5 in. long, 1 to 1½ in. wide, ovate-lanceolate, light shining green, with dark

green stripes round the nerves, glaucous beneath; petiole long; the buds sharp and green.—*Q. glauca Kurikasi nigra*, the branches brown with white stripes; the leaves 3 to 5 in. long, 2 in. wide, ovate, sharply toothed from the middle to the apex, light green above, slightly downy beneath, the young leaves of a shining copper-colour. The following varieties are also known:—*Q. glauca stenophylla*, with leaves narrower than in the type; and *Q. glauca fasciata*, in which the leaves are striped with white.



QUERCUS:—4, *cuspidata latifolia*; 5, *cuspidata angustifolia*; 6, *angustifolia*.

QUERCUS GILVA, of Blume.—This species is of a loose habit, many-branched, the young shoots hairy. The leaves are 5 in. long, $1\frac{1}{2}$ in. wide, lanceolate-oblong, the margins for nearly two-thirds of their length sharply and deeply toothed, the base acute, of a dark green colour and glabrous above, glaucous beneath; and the petiole is brownish.

QUERCUS ACUTA ALBO-NERVIS, of Siebold.—In this the habit is bushy; the branches thick and short, of a brownish colour; and the leaves from 4 in. to 6 in. long, 1 in. to $1\frac{3}{4}$ in. wide, elliptic lanceolate, abruptly acuminate, the margin

undulate-crenate near the apex, the base acute ; petiole an inch long, of a dark green above, light green beneath. The leaf-buds are large, sharp, and green.

QUERCUS CUSPIDATA.—A species of bushy habit, in which the younger branches are pubescent. There are two forms :—*Q. cuspidata latifolia*, of Siebold, which has thick, glabrous, greyish-brown branches, and leaves 4 in. long, $1\frac{3}{4}$ in. wide, closely resembling a Camellia-leaf, dark shining green above, downy and brownish beneath, the petiole small ; and *Q. cuspidata angustifolia*, of Siebold, which is of pyramidal growth, the branches thin and brown, and the leaves from 2 in. to 3 in. long, three-quarters of an inch wide, leathery, lanceolate, dark green above, light green beneath ; the buds are small, sharp, and green. This species is quite hardy in Holland, and is much used in Japan for making hedges. It yields a valuable wood, and the acorns are edible.

QUERCUS ANGUSTIFOLIA, of Siebold.—The habit of this variety is bushy, with thick, short, greenish-black branches ; the leaves are from 3 in. to 6 in. long, 2 in. wide, oval, bluntly acuminate, and crenately toothed near the apex, leathery, of a dark shining green above, glaucous beneath ; petiole short. The buds are brown.

We have notes and sketches of some other Japanese Hardy Evergreen Oaks which we shall take an early opportunity to publish.—T. MOORE.

NOTES ON LEEKS.

IN the patrimony of St. David, the Apostle of the Principality of Wales, Richard ap Davis saluted Owen ap Hughes, on his return from the City of Chester, with a bundle of leeks under his arm, with the challenge, “Where did you get that fine fruit?” The Leek has, indeed, become a by-word, and is reckoned an age behind the Onion, and a century at least behind the Garlic and Shallot. Chives are its companions in modern cookery, and as these are used to season green curled Kale, their character for respectability is not thereby enhanced ; but after all, the Leek has a peculiar flavour, milder by many degrees than even the Portugal Onion.

The Leek has a peculiar build, and its strap-shaped leaves give it an air of gentility which the hollow pouches of the Onion never have. Indeed, a well-grown Leek might easily be mistaken for a flowering-plant of some note ; but it is at best but a stiff-necked biennial, without the bulb of the Onion, and having nothing that even a Welsh Bard could by any means construe into the character of “fruit.” Yet the Leek of Wales is not without its merits, and like many other characters, it is not very well understood. When a dish of Leeks was put on an exhibition-table, an excellent botanist was not ashamed to ask what kind of vegetable it was, as it was quite new to him, and doubtless to many others also, who had never before seen their Leek in that light, for it had assumed the character of a small white Turnip, and was calculated to form a corner dish at table, after the fashion of Cauliflower. But how did my friend get it into this fashion, and what made it leave its normal shape of a bundle of leaves and take

that of a Turnip? Simply by studying its character, and applying horticultural skill to this savoury biennial, so as to hinder it from going to seed.

Now bulbs, as well as most other plants, make a desperate effort to propagate their species, and if that effort happens to be thwarted the next best thing they can do is to increase the size of the bulb, so as to renew the effort again when the season returns. This is the case with Hyacinth bulbs, and with onions grown for two years to get them of large size. The Leek in like manner will well repay the grower, for if he can only prevent it from running to seed, or botanically speaking, from producing its "fruit," and will keep its feeders well supplied with manure, much after the fashion of growing Celery, it will form bulbs as big as duck's eggs, and indeed often twice that size. It is still necessary to earth them up a little, as the bulbs should be blanched, and the thick neck should be trimmed to a pear shape, for the sake of appearances.

A plant so hardy and so amenable to culture, so cheaply got, and coming into use in early spring as a delicious esculent, is not to be thought lightly of, although it savours of the olden time, and is associated with many jibes and jeers against the ancient Briton in his mountain home.—A. FORSYTH, *Salford*.

GOLD-LACED AND OTHER POLYANTHUSES.

I SHOULD infer, from the many inquiries I am constantly receiving, that the old *Gold-laced Polyanthus* is again likely to become popular with many lovers of flowers. Scarcely a week passes during the winter but some one is found asking where such fine old sorts as Sanders' Cheshire Favourite, Hufton's Earl of Lincoln, Cronshaw's Exile, and Buck's George the Fourth can be obtained. These and eight or nine others were much grown from twenty-five to thirty years ago, and I had feared some of them had entirely gone out of cultivation; indeed, a few of them may have quite died out. Of our best known present Polyanthus cultivators, I can instance the veteran John Read, of Market Rasen; William Alsebrook, Sheffield; and the Rev. F. D. Horner, Kirkby Malzeard—who is, floriculturally speaking, "the worthy son of a worthy sire." A visit to either of these gentlemen at this season of the year, would prove a treat to any lover of this fine old florists' flower.

To do full justice to the exquisite beauty of the Gold-laced Polyanthus, the plants must be grown in pots. Polyanthus in the open air cut but a sorry figure, when the cold winds of March sweep across our gardens, and shrivel up the delicate blossoms of our early spring flowers. The Polyanthus should be in a cold frame, near the glass, where the plants can have plenty of light and air, to keep them from becoming drawn. Top-dressing is done now. The reason for this is at once seen by any one conversant with the habit of growth of the Polyanthus. At this time of the year, the spring growths are being matured, and these growths spring from near the collar of the plant, and they throw out rootlets near the surface. These rootlets should have something good to root into, for the plants derive a great deal of sustenance through them; hence the practice

of top-dressing. The florists who grow this flower for show, use thoroughly rotten horse and cow-dung, and maiden loam, in about equal proportions. No cold winds or frost are allowed to come near the flowers, as they are likely to do injury to them. The direct influence of the sun must also be guarded against, as hot sunshine will mar the beauty of the blossoms.

There are yet many who, for want of accommodation, grow the Polyanthus in the open ground, and that most successfully. The bed is carefully prepared in the autumn, by digging it deeply, and manuring well with thoroughly rotten cow or horse-dung and plenty of leaf-soil, and by the beginning of November the plants are planted out. The Polyanthus will stand a great deal of moisture at the root during winter, provided there be a free circulation of air; and it is always well, when severe wintry weather threatens, to shake some fern or other loose litter over the plants, to screen them from injury. By the middle of March a movement of growth will take place, and the flower-spikes will begin to show themselves. The soil should be stirred about the plants to the depth of an inch, taking care to avoid doing injury to the roots by disturbing them, and the bed should be top-dressed with a compost like that recommended for plants in pots. When this is done, some shelter should be extemporised from cutting winds. One of the best means of obtaining this shelter is to cut some branches of the Spruce Fir into small pieces, and stick them about the beds to windward of the plants, and in this way an excellent screen is obtained.

During the last two or three years a fine strain of decorative Polyanthus has been obtained, and designated as a fancy or mottled section. The plants are all of vigorous growth, and they throw up bold trusses of flowers on strong foot-stalks, the blossoms being of great size and beautifully marked. From pure white, through yellow, pale lilac, rose, bright purple, magenta, and crimson, these Fancy Polyanthus vary in colour, and having plenty of robustness of constitution, they are invaluable for beds in early spring, for mixed borders, and for cultivation in pots. A good soil is required, and the more attention they receive the more beautiful are their flowers. Last year, the Royal Horticultural Society certificated two or three types, so finely were they shown at some of their meetings—a measure of encouragement they well deserve.

These few seasonable notes would be incomplete without mention of the new Single Primroses that have been raised and exhibited of late. The yellow Primrose of our hedges and woods has developed into a flower of great perfection and beauty by means of careful fertilisation. White and yellow, lilac and purple, rose and red, magenta, scarlet and crimson, and even blue shades, have been obtained. Such varieties as Violet Gem, Auriculæflora, Rosy Morn, Sunrise, Violacea, Lilacina, Splendour, Fairy Queen, and Sulphurata, may be mentioned as worthy representatives. All the qualities most dearly prized by the florist—form, outline, substance, brilliancy of hue, &c.—are here present, and, in addition, they flower early, profusely, and continuously. They are remarkably fine when cultivated in pots, after the fashion of the Polyanthus; but they do not require

any coddling, for they are as hardy and robust in character as the common Primrose of the roadside.—R. DEAN, *Ealing*.

SAXIFRAGA CILIATA.

THIS is a hardy herbaceous species belonging to the same group as *S. cordifolia* or *S. crassifolia*, and is well worth a place in the greenhouse or cold frame during the winter and spring months, for the sake of its rosy or salmon-tinted flowers, which are freely produced in February and March, and come in very handy for cutting. The wax-like bell-shaped flowers are borne on stout erect peduncles, among the roundish heart-shaped ciliated foliage, and are so distinct in form and colour, that they are very useful for grouping in button-hole and other bouquets, along with Lily of the Valley, Bouvardias, *Jasminum grandiflorum*, and other white flowers. The flowers open in gradual succession on the peduncles, and can be cut singly and wired when wanted, and in this way a single plant furnishes flowers for several weeks. A great point in its favour is its durability when mounted on wires.

In private gardens where button-hole bouquets have to be supplied daily, it is often a matter of some little difficulty to obtain good substantial flowers, of distinct forms and effective colours. Just now this plant would prove very useful either for the last-mentioned purpose, or it is well worth a place as a pot-plant on the greenhouse stage, to say nothing of its usefulness and adaptability as a plant for naturalisation on a warm border or on a sunny rockery, where its flowers would open later in the season.

This is only one of the many hardy plants that might be potted in the autumn or winter, and placed in a greenhouse or cold frame or pit, where they not only flower early, but their flowers and foliage come larger, brighter, and cleaner, than when exposed to splashing rains, and the cold east winds of February and March. What can be more beautiful than the rich purple *Iris reticulata*, *Iris nudicaulis*, *Scilla sibirica*, *Rhodiola rosea*, *Narcissus Bulbocodium*, *Cyclamen Atkinsii*, *Galanthus nivalis* (Snowdrop), *Helleborus niger* (Christmas Rose), blue and pink-flowered *Hepaticas*, and the different varieties of the common Primrose, when grown in pots, in a sunny pit or frame? Growing hardy plants indoors is no new idea, but it is one as yet not half developed; and while we all force such hardy plants as *Narcissus Tazetta*, *Narcissus odoratus*, *Dicentra* (*Dielytra*), *spectabilis*, Lily of the Valley, Hyacinths, and Tulips, we seem to forget that nearly all hardy bulbs, and at least fifty per cent. of all our hardy herbaceous and border flowers, are amenable to the form of culture here indicated.—F. W. BURBIDGE.

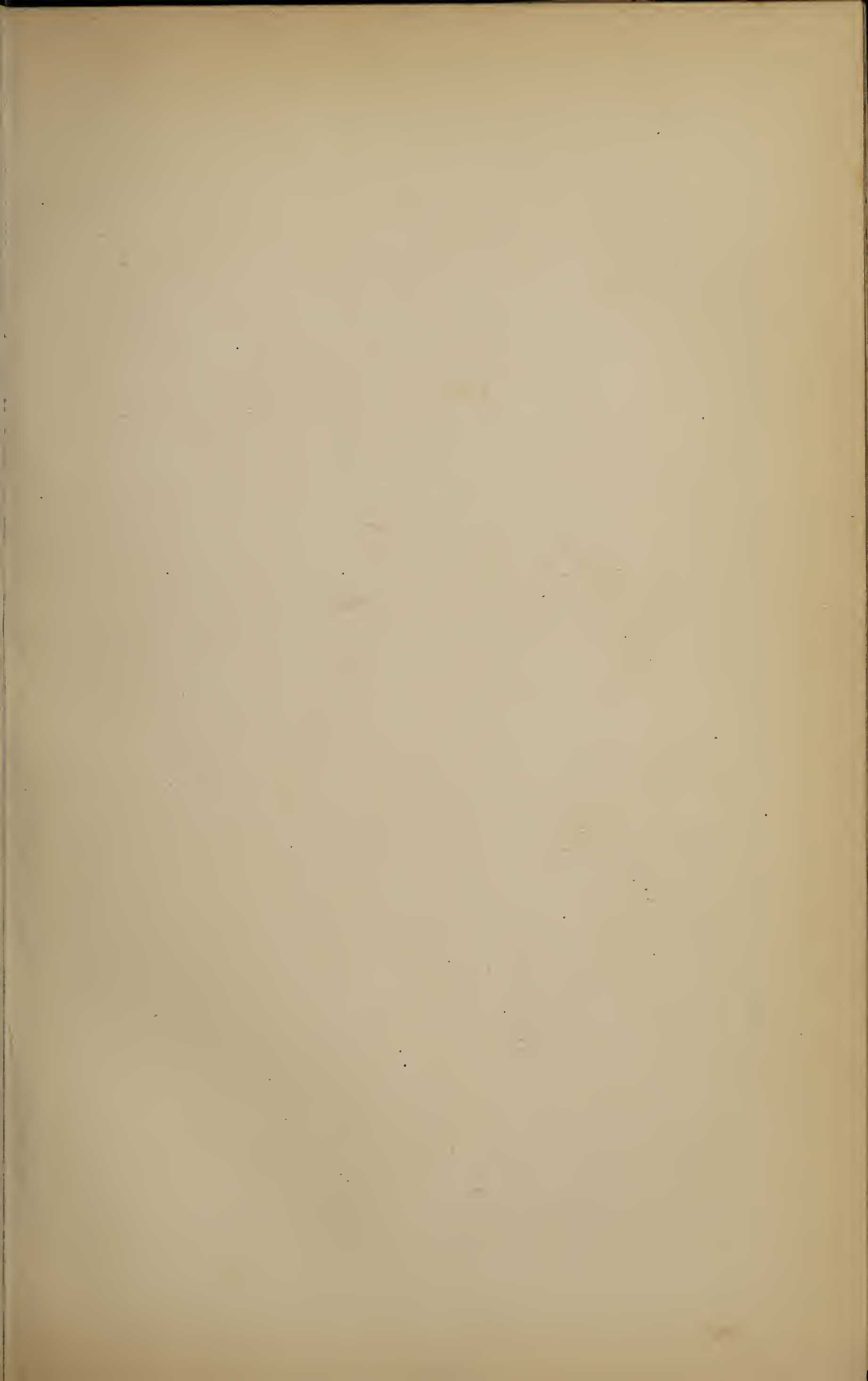
GARDEN GOSSIP.

SO far, during the present year, the meetings of the *Royal Horticultural Society*, whatever the cause—whether the protracted cold weather or the internal dissensions of the Society—have very much fallen off in interest. At that which was held on Jan. 20, a fine group of Cycads, containing a

good plant of the rare *Zamia Roezlii*, the leaflets of which are 8-10 in. long, came from Mr. Bull; while Messrs. Veitch and Sons gained a First-class Certificate for *Nepenthes intermedia*, a hybrid of which one of the parents was *Rafflesiana*, and which had the pale green, lightly red-spotted pitchers, broad at the base, narrowing upwards, and being freely produced.—On Feb. 17, one of the prettiest exhibits was a basket of the rosy-lilac Primrose, falsely known as *Primula altaica* in gardens, from M. Miles, Esq., of Shirehampton, Bristol. Messrs. Veitch had a First-class Certificate for *Abutilon Darwinii*, a free-flowering plant with white leaves, and broadly-campanulate deflexed veiny flowers, of an orange-buff colour; and a Second-class Award for *Odontoglossum Warscewiczii*, from Costa Rica, a remarkably free-flowering plant, with small thin ovate pseudobulbs, and flower-scapes issuing from the leaf-axils of the young growths, and bearing four-flowered racemes, the flowers 2 in. across, white, with a dull purple spot near the base of the squarish bilobed lip.—On March 3, Mr. Green, of Reigate, exhibited *Masdevallia melanopus*, a small but charming subject, with white flowers having the cup-shaped portion dotted with red, and the inch-long tails yellow, the leaves being oblong spatulate, and the whole plant not more than 3-4 in. high; it received a Botanical Certificate. The small white-flowered *Calogyne conferta* was shown by J. L. Bockett, Esq., Stamford Hill.—Several interesting subjects were present at the meeting of March 17. *H. P. Rose Hippolyte Jamain*, a bold-leaved large-flowered novelty, was shown in splendid condition, the blossoms being of a bright clear rose-colour, very full and smooth; Mr. Bennett, of Stapleford, Salisbury, the exhibitor, received for it a First-class Certificate. Other good plants not certificated, were *Phalenopsis leucorrhoda*, from Mr. Bull, a charming natural hybrid, the imported batch of which is yielding several very marked variations. It comes from the Philippines, and is no doubt intermediate between *P. Schilleriana* and *P. Aphrodite* (our *P. amabilis*); the leaves are blotched like the former in the type form; the flowers have the sepals and petals flushed with rose, while the lip, which has short eirrhose horns, is flushed with yellow, and banded and spotted with crimson-purple at the base and on the lateral lobes. Another form, distinguished as *P. leucorrhoda grandiflora*, has the leaves freckled all over with less distinct markings of grey, the flowers rather larger, the eirrh longer, and the roots more terete,—in fact, tending more towards the *amabilis* type. The New Plant and Bulb Company, of Colechester, exhibited *Tulipa Greigii*, a new Caucasian species, having the leaves marked with short black lines, and large narrow-petaled crimson-red flowers, horned at the tip of the petals, with an oblong black spot at their base, and yellow anthers and stigmas. Some new Hyacinths of considerable promise came from Messrs. Veitch, amongst them *Disraeli*, a single blue, with broad segments, pale blue shaded with darker blue, and a good close spike; *Baron Beust*, a large-flowered single pale blue, with darker stripes; and *Duchess of Edinburgh*, a single blush-red, with broadish segments, and fine close spikes. *Masterpiece*, in the same group, was a fine single black-purple, with glossy surface, and forming a close even spike. A new white-flowered *Lilac*, called *alba grandiflora*, no doubt an acquisition, was shown in a forced state by Messrs. Paul and Son, of Cheshunt.

— MR. CLAPHAM, of Scarborough, a most successful cultivator of the *Mimulus*, has worked up a very fine strain of the maculosus type, some of them unrivalled in character. He gets two crops or successive generations in one year, by treating them after the following fashion:—He first sows on or about the 1st of March, in a gentle heat; the seed soon germinates, the seedlings are pricked off into pans, about fifty plants in each, at one inch apart; the pans are placed in a cold frame, and the seedlings begin to flower in about twelve weeks from the sowing. As they flower, the poor ones are weeded out, and good ones potted into thumb-pots, and used for supplying pollen with which to fertilise other flowers, or to bear seed. A sowing from this seed is made as early as possible after it has ripened—generally from the 4th to the 20th of July, and in the space of from eight to twelve weeks this batch of seedlings also blooms, and from the most promising flowers of this second generation of seedlings is obtained the supply of seed to sow the following spring. These easily-grown and handsome flowers should be more popular than they are.

— A FINE new Hybrid Perpetual Rose, *Duchess of Edinburgh*, raised by Mr. Bennett, was early last season awarded a First-class Certificate. It is said to be the result of crossing *Marguerite de St. Amand* with *Madame la Baronne de Rothschild*, and the flower is rather like the pollen-parent in outline and colour, but the wood is more robust and stubby, resembling that of the mother-parent. The flowers stand stiff and erect on the stalks. Some of the back petals recurve, as is the case with *La France*, giving a pretty finish to the flower.





W H Fitch del

French Paradise Apple.

(Pommier de Paradis)

THE FRENCH PARADISE APPLE.

WITH AN ILLUSTRATION.

E have much pleasure in submitting to the readers of the *FLORIST AND POMOLOGIST* a figure of the true *French Paradise Apple*, the *Pommier de Paradis*, which, when used as a stock, is of such inestimable value in inducing dwarfness and prolificacy in other varieties of Apple. Our figure was made from samples obtained in the garden of the Royal Horticultural Society at Chiswick, where, after many failures, owing to adverse seasons, Mr. Barron succeeded last year in obtaining blossoms and fruits, both of which, as well as the foliage, have been included by Mr. Fitch in the accompanying plate.

We take from an article in the *Gardeners' Chronicle* of April 25, 1874, the following notes on the various Apple stocks then growing at Chiswick:—

“Mr. Barron has collected from various sources, British and Continental, a number of Apple stocks, which are growing side by side, so as to admit of easy comparison. Side by side, also, are various Apples worked on the several stocks. There are the Crab stocks (*Pommiers francs*), with long, spreading, rigid, wiry, tangled branches, of a deep purplish-black colour, and at the time of our visit (April 11) with no vestige either of leaf or flower to be seen. There is the Dutch Paradise, of straggling habit, with olive-coloured shoots, in full leaf, but without a flower. There is Mr. Rivers' Nonsuch English Paradise, destitute of leaf or flower, and Rivers' Miniature Paradise, equally late, and scarcely justifying its name. There is Mr. Scott's Paradise, of very distinct, somewhat pyramidal habit, in full leaf, but with scarcely a flower to be seen. There is the Doucin, also of pyramidal habit, and producing flowers early.

“Then there is the true French Paradise, *Pommier de Paradis*, obtained from the most reliable sources in France, which must unquestionably bear away the prize for precocity of flowering and abundance of bloom. By precocity we mean not only early flowering with regard to season, but with reference to age also; while other stocks of the same age have not reached the fruiting stage, this one has already done so. It is of rather straggling habit, but full of flower. While some stocks at the time of our visit were scarcely showing flower and others none at all, this one stood out in the row sheeted over with pale pink blossoms. These qualities it very markedly contributes to the grafts. Short compact growth, and early and abundant flowering, characterise the scions grafted on this stock, as they characterise the stock itself. A long row in one of the quarters, consisting of various Apples grafted on this stock, side by side with rows grafted on other stocks, is one of the most striking illustrations of the effects and consequences of grafting it has ever been our fortune to witness. The difference in appearance is so great that it would almost seem as if the one row were cultivated for fruit, the other for timber! By way of illustration we may mention the Rhode Island Greening, a vigorous-growing kind, but which when worked on this stock becomes subdued, assumes a short, bushy habit, and produces an abundance of

early bloom. What was formerly grown at Chiswick under this name of French Paradise is quite a different thing, and relatively very inferior. Of course this Paradise stock is not intended for orchard use, where the freer-growing stocks are preferred."

The French Paradise stock referred to in these remarks is that which we now figure. The plant is of spreading habit, with purplish shoots. The inflorescence is abundant, and precocious as to season, and also in relation to the age of the plant. The young leaves are glabrescent, oblong-lanceolate, the apex acute, the base rounded, the margin crenulated, the crenulations mucronulate; the petiole is less than half the length of the leaf, setose, and the stipules are linear-subulate, as long as the petiole. The peduncles are about three-quarters of an inch long, setose; the flower-tube glabrous urceolate, reddish, one-eighth of an inch long; the calyx-lobes triangular, gradually acuminate, setose within; the petals concave, oblong, obtuse, tapering at the base into a short stalk, and provided with a few cottony hairs on the inner surface; the styles are crested at the base for a short distance, and there slightly covered with cottony hairs, dividing above into five stigmatic branches.

The fruit, which is a really good early eating Apple, is, according to our notes, of medium size, oblate, somewhat angular, yellow, changing on the exposed side to deep golden-yellow, and sometimes having a thin flush of rosy-red. The eye is broad, but closed, sunk in a rather deep cavity. The stalk is short, scarcely projecting from the hollow, which is not so deep as that of the eye. The flesh is pale straw-colour, fine-grained, solid, juicy, and with a brisk agreeable flavour. It ripens in the middle and end of August, and would form a good useful early dessert apple, independent of its value as a dwarfing stock for apple-trees grown in the bush or pyramidal form.—T. MOORE.

CELOSIAS AS DECORATIVE AND EXHIBITION PLANTS.

BOTH the crested dwarf and the pyramidal growing kinds of *Celosia* have been greatly improved, and each has its admirers; the dwarf Cockscombs being more particularly grown for exhibition purposes, whilst the pyramidal-habited are most prized for conservatory decoration, as well as being extremely useful for cutting.

Of the latter there are various graceful strains, which attain large dimensions under favourable culture, presenting flower-plumes of the most brilliant colours, with such elegance of habit and durability as to place them amongst the most desirable decorative plants that we possess. The first sowing of these should be made in February or March, in fine soil, the seeds being placed in heat to germinate, and the pots set up near to the glass, as soon as they appear above the soil, to prevent drawing. As soon as the young plants are fit to handle they should be pricked off separately into well-drained pots, keeping them, as soon as they take to the soil, close to the glass, and potting them on as they may require it. For ordinary purposes 6-in., 7-in., or 8-in. pots will be sufficiently large, and plants

four feet high may be grown in these. If space is at command, larger plants may be grown in 10-in. or 12-in. pots. The most suitable compost is equal parts of fibry loam, and thoroughly rotten manure and leaf-soil, with a free admixture of charcoal and sand to insure porosity, and it is necessary to use thoroughly-drained pots. The plants must be kept plunged in bottom-heat during the early stages of growth, and freely ventilated to prevent them from drawing, a well-furnished foundation being a great point to attain. The plants must be liberally syringed morning and afternoon, so as to keep under both spider and thrips, to the former of which they are particularly subject, and these quickly destroy the foliage when not subdued. As the plants attain size, a light airy greenhouse will be found the most suitable place in which to grow them, care being taken to harden them off progressively, previous to placing them in it. As the pots become filled with



roots, they will be benefited by liberal applications of manure-water, until they show bloom, when they may be transferred to the conservatory. A successional sowing for winter-blooming may be made in April or early in May.

The dwarf forms of Cockscombs are very frequently seen exhibited at our Local Exhibitions grown to really marvellous proportions, such as is represented by a remarkably fine variety, showing great density of crest, with a dwarf compact habit, in the accompanying illustration [for which we are indebted to Messrs. Sutton]. The cultivation of these differs somewhat from the above, inasmuch as they require a greater amount of heat, and of care in getting the plants to show their crests when small. To insure this, the seed should be sown in March, and the young plants should be potted-off singly into small pots as soon as they are fit to handle, and plunged in a frame with a brisk bottom-heat near the glass, giving air to prevent drawing until they show bloom. They should then be potted on, with liberal drainage, using a rich compost of rotten dung, leaf-soil, and loam in

about equal parts, with a free admixture of sand and charcoal, and be kept growing in a temperature of 65° to 70°, and freely syringed. A very important point is to keep the plants stocky; and as to root-space, 6-in. or 7-in. pots will be sufficiently large, if they are copiously supplied with liquid manure at each watering, as soon as the pots get filled with roots. Cockscombs are gross feeders, and must have an abundant and nutritious diet to promote perfect development.

Inferior strains of Cockscombs are apt to become lanky under any system of management. When such is the case, and average crests are shown, they may be cut off and propagated in a close frame, keeping them shaded; they will root in a few days, and must afterwards be inured to the usual treatment, and then they may form fair average Combs. Any one having a dung-frame at command may grow these interesting plants with the usual attention, and they will stand in a window, when gradually hardened off, for a considerable length of time.—
—GEO. WESTLAND, *Witley Court*.

THE LAMBTON CASTLE VINES.

WE have on previous occasions referred to the splendid clusters of Black Hamburgh Grapes, which have from time to time been exhibited by Mr. Hunter from the gardens at Lambton Castle, those of last year's crop greatly exceeding anything previously on record, one bunch having reached a weight of 21 lb. 12 oz. Naturally enough, some curiosity was excited as to the treatment to which Vines yielding such splendid results had been subjected, and this Mr. Hunter has recently met by reading a paper before the Gardeners' Institute at Darlington, on his management of the Vines in the house where the monster clusters have been produced. From this paper, which has been printed and circulated, we make some extracts. Mr. Hunter states that:—

"The house was put up in the early spring of 1869; it occupied the old foundations so far as regards width, but was in length made nearly double, by putting two into one. This house stands on piles. While making alterations, I found after boring that we stood 31 ft. 9 in. from anything solid to work on. However, after getting a cement-and-brick bottom to my satisfaction, some 4 ft. in depth, I resolved to have the borders made without further delay. Drainage on such a bottom as this must be efficient and thoroughly well carried out. In this case our front drain is built with brick, and pipes put inside, so that the top of the drain is a little below the cement bottom of the border; a line of 6-in. pipes crosses at every 6 ft. from front to back, and at every 4 ft. from end to end of the house, the pipes thus forming a number of oblong squares, 6 ft. by 4 ft. This was filled up with brick-bats to a foot in depth, and then with small stones and coarse gravel, after which it was turfed over, the grassy side of the sod being placed downwards. Soil suitable to make the border was the next important item. The park, or a portion of it, had been drained previous to my coming to the gardens; I used the turf which was put aside for gardening purposes, and cut fresh turf to make out with. To every six cart-loads of soil, I added one of lime *débris*, one of charcoal, one of burnt clay, 3 cwt. of broken bones, and a good dressing of clean cow-manure. The whole was turned over twice in the border, and in a few days the Vines were planted. Some of them were from one-year-

old canes, and the others from eyes struck the same spring, the latter having a decided advantage at the end of the first year's growth, which they still maintain. Wireworm was found most destructive the first year; to check this, the surface of the border was smoothed with the back of a spade, coated over with rape-dust, on which were laid thin boards, which were covered up with 2 in. of old mushroom manure; this was turned over every alternate morning, when the wireworms were picked off the boards by hundreds.

"With this treatment the Vines carried their foliage well into December, when they were cut back to 6 ft. from the bottom. I very soon after felt disposed to see what wireworms were left in the border, and also with a view of further assisting the Vines, I had an opening taken out at the back of the border and worked forward on them carefully with steel forks; every portion of the border was turned back and hand-picked until within 3 ft. of the Vines, by which time we had a fine lot of roots laid bare. The soil was worked forward again, with the addition of a few more ingredients to the old, the roots being carefully laid in again. This has been done this, and every year, with one exception, since planting, and I doubt not with advantage to the Vines. At one place where I was, under a noted Vine-grower, I assisted in making over a hundred yards in length of new Vine borders, at various widths, and to my surprise on removing the old Vines, which were considered A 1 in their day, I found that each had but a root or two to support them; they had taken up their abode in some quarter never made for them, as they passed out of the border, without leaving a fibrous root in it. Imagine a gardener trying to assist the Vines by watering and top-dressing such borders!

"I shall close by giving the outlines of treatment the Vines had in this house. In the latter end of February the house was kept close, previous to starting, on March 1, when syringing, morning and evening, was well done, according to the weather; fire-heat was applied at 6 a.m., and taken off at noon; and no fire-heat was given at night unless rendered necessary by frost. During the month the outside and inside borders were watered with 1,680 gallons of tepid water, running on at the rate of seven gallons per minute through a fine rose. By the 15th no syringing was allowed overhead. During April fire-heat was turned off sooner in the day, weather permitting, but was applied immediately after shutting up. On the 6th, so rapid was their progress, that the shoots were pinched two leaves beyond the fruit, and tied down. On the 13th, the evaporating troughs were allowed to become dry, and fire-heat was used freely, front air was put on at 8 p.m., and increased at 10 p.m. On the 20th, the Vines were in full flower, the treatment remaining the same, only the troughs becoming dry. By the 27th, all the flowers had set; then the evaporating troughs were refilled, and front air was more freely admitted. On May 1, thinning commenced; airing as in April. On the 13th, the inside border was watered with 3,360 gallons of guano-water, at a temperature of 85°. After the 18th, the temperature of the house was not allowed below 65°, when front air at nights was admitted much more freely. On June 15, the outside border was watered with guano-water, running at the rate of six gallons per minute, which lasted seven hours, the quantity given being 2,520 gallons. Again, on the 29th, this house received 5,040 gallons, and on July 20, 1,680 gallons. All this was put on at a uniform tepid temperature. The regular requirements, such as stopping, tying, thinning, &c., were duly attended to. Here we have a dry locality; in the grape-growing season at Lambton Castle our rainfall did not exceed ten inches."

Abundant but judicious feeding would appear, then, to be the speciality in Mr.

Hunter's treatment, to which the noble results he has realised are to be attributed. The large quantities of water—mostly guano-water—applied, show that Vines delight in abundant moisture at the root, while the peculiarities described in reference to the subsoil show that drainage is perfect—that, in fact, there is no stagnation. Moreover, the stimulus given to root-action by such an abundant use of *tepid* water must be credited with its share of the results.—T. MOORE.

CLEMATIS INDIVISA LOBATA.

THIS evergreen Clematis should be grown by all who possess space for greenhouse climbing plants, where they can ramble fairly free from restraint. It is a somewhat attenuated grower, roaming away into space indefinitely from its base. Hence it is well adapted for mixing with climbing plants grown with the least amount of restraint. The leaves are of a neat form and a pleasing tint of green, and the blooms, which are not greatly unlike as to their size and appearance those of *C. montana*, are borne from three to six together on branched stalks. They have a somewhat darkened eye of a puce, or reddish-purple tint, which contrasts favourably with the pure white of the sepals—pure white, that is, when fully blown, as they are nearly green in their infantile state, and grow into whiteness and purity. The plant is as hardy as any of its kind need be, still to be considered as a greenhouse climber. A plant that we have had beautifully in bloom for the past month or two, withstood a temperature of 35° for many nights during the past winter. The blooms last moderately well when cut.—WILLIAM EARLEY, *Valentines*.

CHAMÆROPS GRIFFITHII.

IF all the flabelliform-leaved genera of Palms, there are few, writes M. Carrière in the *Revue Horticole*, which have of late fixed attention more than that of *Chamærops*. It is one of those which, by the elegance and the hardiness of the species which constitute it, can best furnish us with the materials for the ornamentation of gardens and apartments. Established by Linnæus for the only species then known, *C. humilis* (which is abundant in North Africa, where it constitutes broad, generally dwarf, tufts, remarkably difficult of extirpation, and which is also found on the Mediterranean shore in Spain and Italy), this genus has been enriched by several other species, all, however, belonging to the temperate regions of the old and new worlds : China, Japan, Nepal, Florida, and Georgia. This dispersion in exclusively temperate countries, so remarkable for plants of the Palm family, explains why they have received so much attention in gardens.

The species represented in the accompanying figure, *C. Griffithii*, of Loddiges, is, according to that author, a native of the East Indies, where it grows at a rather considerable altitude ; nevertheless, it is, in the climate of Paris, adapted for the temperate greenhouse, or the orangery, or possibly it might be grown in the open air in the South of France, and in Algeria. The unique example which

the Muséum possesses was sent there in 1839 by Dr. Wallich. This is the plant represented, and which, planted out some twenty years since, in the large temperate pavilion, has become one of its most interesting occupants. Its trunk, which is naked below, measures about 10 ft. in height, and 6 in. to 8 in. in diameter throughout its length. It is crowned by a tuft of leaves 15 in number, of a tender green, their spreading or ascending petioles, which are 4 ft. to 5 ft. long, being unarmed and glabrous, with the exception of those of the youngest leaves, which have the edges abundantly furnished with a whitish tomentum. This *Chamærops* has not



CHAMÆROPS GRIFFITHII.

yet flowered at the Muséum. Its graceful figure removes it far from the other species cultivated there, namely, *C. humilis*, Linn.; *C. hystrix*, Fras.; *C. staurocantha*, Hort. (which some authors refer to *Trithrinax*); *C. aculeata*, Liebm.; *C. Fortunei*, Hook.; *C. excelsa*; *C. sinensis*; *C. Martiana*, Wall. To these five species one may still add, according to Wendland, *C. guyanensis*, Lodd. (*C. cochinchinensis*, Hort. Par.). Nevertheless the plant, not yet adult, which is cultivated now at the Muséum under the name of *C. cochinchinensis*, seems to have too much resemblance to *C. humilis*, of which it is probably a variety.

C. Griffithii is only known to us by the catalogue published by Loddiges in 1841, but it seems very similar to *C. khasyana*, Griff., a species from the same regions, and which Griffith has described and figured in his work on the Palms of India, but which has not yet been introduced. Whatever it may be, it is exceedingly rare in cultivation, and perhaps even still exists only in some few scientific gardens. It is unknown in our horticultural establishments, which makes one suppose that it has not been reintroduced since its arrival at the Muséum, a fact which is all the more to be regretted, since we have here a species which at once recommends itself by its elegance and beauty.—M.

FLORICULTURAL NOTES OF THE MONTH.

SOME glimpses of the New Roses of 1873 and 1874 are now being afforded through the medium of the Spring Shows; and really when do Roses look so bright and beautiful, and appear so welcome, as when seen at our early exhibitions, produced by such growers as Messrs. Paul and Son, and Mr. William Paul? At the exhibition of the Regent's Park on March 31 the New Roses were shown in strong force, and a First-class Certificate was awarded to Mr. William Paul for *H. P. Star of Waltham*, one of his own seedlings. Two years ago this splendid Rose was first shown, and then it attracted all rosarians to it; and here it was again, large, full, lustrous in colour, and superbly beautiful, its bright carmine-rose hue and its constancy being especially noticeable. *H. P. Thomas Mills*, one of Messrs. Paul and Son's seedlings, was singularly bright in colour, of a vivid cherry-red hue, but as staged showed a tendency to open in the centre; from what I remember of it last year, I should say it will come fuller in the summer, when grown in the open air. What a lovely delicate Rose is *H. P. Captain Christy*! nearly white on the exterior, pale carmine-flesh in the centre, large and full, and exquisite in the bud state. *H. P. Duchess of Edinburgh*, light silvery-pink, forces well, and is full of promise. *H. P. Etienne Dupuy* is a darker flower, globular, and fine; we shall see this good in the summer. *H. P. Madame Louis Leveque* has deep rosy-carmine flowers, and is considered one of the best new Roses; let cultivators bear it in mind. Every Rose-grower almost thrilled with admiration before the delicate beauty of Mdlle. Eugénie Verdier, one of those flowers with a strongly marked individuality of character, like La France; the new *H. P. Marie Finger* resembles it in type, but is darker, a lovely shaded salmon-rose that cannot fail to become a favourite. *Noisette Caroline Kuster* is very fine also, having bright orange-yellow flowers somewhat of the shape of Céline Forestier, and it forces well; so does *Tea Cheshunt Hybrid*.

The dull sunless weather renders shading unnecessary for forced Roses, and prolongs the beauty of the flowers. In such weather the difficulty lies in maintaining a proper temperature and sufficient airiness. If the plants are kept too close, thrips appear; on the other hand, cold draughts playing directly on the plants are not beneficial.

CINERARIAS are invaluable decorative flowers for early Spring; they are now at

the best, and some of the most cheerful tints in the greenhouse are supplied by them. Mr. J. James, Redlees, Isleworth, exhibited a capital strain at the meeting of the Royal Botanic Society, on March 31, dwarf, vigorous, and bearing brilliant-hued and finely formed flowers. Three of these were selected for First-class Certificates, viz., *Ann Page*, white disc, with narrow ring of white and broad margin of deep purplish-rose; *Brightness*, white disc, very slight ring of white, and broad margin of bright crimson; and *Charles Bending*, dark disc, with a slight ring of white, and massive margin of crimson, dashed with purple. To preserve the effectiveness of Cinerarias in flower, the blossoms should be picked off as soon as they begin to fade. If they are allowed to carry and ripen their seeds, the plants have a confused and untidy appearance; a half-dozen or so of the best types should be selected for seeds, and placed away in a quiet corner, out of the reach of the burning sun, and of puffs of wind which soon scatter the seeds.

Amongst HYACINTHS, but little of a valuable and novel character has come to the front this season. At the meeting of the Royal Horticultural Society on March 17, Messrs. Veitch and Sons staged a group of new varieties, and though among them there might have been two or three of promise, they were not up to the mark of established varieties. Perhaps it would be well, if new Hyacinths were simply commended the first year they were shown, and then certificated, if deemed worthy, the second year. There is, no doubt, a great desire on the part of the English cultivators to get the very best of the Dutch seedlings into cultivation for exhibition purposes as soon as possible, and the inevitable consequence is that they are flowered and exhibited before the bulbs reach their proper measure of maturity. They cannot be shown as new varieties again, unless it should be done under different names. The finest new flower that has come to the fore this season, is one named *Etna*, a semi-double red variety, shown by Messrs. Veitch and Sons; the colour is bright rose shaded with crimson; the bells are large, the segments very broad and smooth, and the spike of a symmetrical shape. This was awarded a First-class Certificate. One or two dark blue flowers among the new varieties promised well, and may be seen in better form next year.—R. DEAN, *Ealing*.

GARDEN WORK FOR MAY.

FLOWERS.

IN order to facilitate the labour of "bedding-out," such beds as are at liberty should be put in readiness, adding fresh composts, and working up the soil to the ameliorating influence of the weather. Whilst such plants as flowering *Pelargoniums* are not improved by being grown in rich soil, those that are prized for their majestic aspect, such as *Canna*, *Melianthus*, *Polymnia*, *Ricinus*, and *Wigandia*, and which luxuriate in enriching elements, should have an abundance of rotten manure worked into the beds. Materials must be had in readiness for the renovation of such beds as are planted with Spring-flowering plants, which must be lifted towards the end of the month, and replanted in the reserve-ground, dividing into small portions such plants as

Aubrietias, *Arabis*, and *Daisies*, &c. In the arrangements for summer decoration the endeavour should be made, by skilfully blending in pleasing harmony both foliage and flowering plants, to create as great a variety as possible. Absolute rules cannot be laid down as to their disposition. The modes of arrangement will, to a great extent, have to be governed in accordance with individual taste, and will always undergo periodical alterations subservient thereto. Be not induced by bright gleams of sunshine to plant out tender plants too early, as the weather is often treacherous towards the end of the month. Such subjects as *Calceolarias* do best planted out early, if previously hardened off; after planting these, water freely to settle the soil about the roots, and mulch the surface with short manure, so as to retain moisture; if they are allowed to become dry at the roots when planted out, they frequently succumb from this cause, for *Calceolarias* delight in a compact, moist medium. Attend to the watering of recently planted Shrubs and Trees, and finish the planting of Evergreens. In order to assist *Rhododendrons*, *Kalmias*, &c., grown in masses, to develop their blooms, they should have copious supplies of water. Plant out spring-struck *Hollyhocks*, *Pentstemons*, and *Phloxes*, &c., and sow seeds of *Biennials*.

Conservatory: Permanent plants, such as *Camellias*, which are planted out will now be making rapid growth, and must be freely supplied with water; syringe freely every afternoon, being careful that the atmosphere becomes somewhat dried before nightfall, as the blossoms will be of short duration if confined in a humid atmosphere. *Creepers* must be regularly trained and kept within reasonable bounds, or else the strong-growing kinds quickly become wild entanglements, to the detriment of such plants as are grown under them. *Hydrangeas* are useful plants for conservatory decoration when well grown, and such as are coming forward will be benefited with copious supplies of manure-water; *H. Otaksa* and *H. paniculata grandiflora* are most effective plants; cuttings from the shoots that are not showing bloom should now be rooted. Give the necessary attention to shading and ventilation.

Stoves: With increased heat we have increased root-absorption, and many stove-plants drink greedily, so that the supplies must be more copiously provided for them, by syringing during the afternoons and freely damping the pathways. Many of the plants which were potted on early in the season will now require shifting, before they become pot-bound. *Poinsettias* should be propagated, being careful to keep young growing stock near to the glass, and freely supplied with air, to prevent drawing. Give timely attention to the training and stopping of all free-growing plants.

Orchids: Many of the most charming of these will now be in bloom, and should have such attention as shading and placing them in a moderately cool atmosphere, in order to prolong the flowering period to the utmost. As they for the most part will now be growing freely, they must be liberally supplied with water at the roots, as well as provided with atmospheric humidity, ventilating freely at the top only, so as to avoid draught.

Ferns: By shutting up early in the afternoon, but little fire-heat will now be required. Give attention to potting on as necessary. Such plants as are established must have an abundance of water; and all must be kept shaded from direct sun.

Greenhouse Plants: *Azaleas*, as they go out of bloom, should have the flowers removed, repotting such as may require it; they delight in a warm, humid atmosphere whilst making growth. *Fuchsias* should have timely attention in staking, pinching back the side shoots upon growing plants so as to regulate the form, and encouraging with liberal applications of manure-water. All autumn-

blooming soft-wooded plants will require frequent shifts, and should be kept growing, and near to the glass. *Chrysanthemums* must be potted on before they become pot-bound; they delight in a liberal diet. Give attention to the pricking-off and potting-on of *Cinerarias*, *Balsams*, *Celosias*, &c., keeping them close and shaded until they are re-established.

Bedding Plants: The majority of these will now be placed under temporary protection to harden, previous to being planted out. *Alternantheras*, *Coleuses*, and *Tender Annuals* which are growing in pits should have an abundance of air, to prevent them from being drawn up.—GEO. WESTLAND, *Witley Court*.

FRUITS.

Pines: Shift succession-plants as they may require it; maintain a moist growing temperature of about 70° , that may rise to 85° or 90° through the day in bright weather; avoid a burning bottom-heat. Air freely in good weather, from the back of the pit only, for, as previously stated, a draught through the pit will soon cause the plants to assume a brown and unhealthy appearance. All plants intended for winter fruiting should now have their final shift. Keep up a moist heat in the fruiting-house, and let the temperature range from 75° to 80° , with an increase of 10° by sun-heat; syringe in the afternoon, and close the house early; give liquid manure occasionally to all plants in free growth, as well as those in fruit.

Peaches and Nectarines: After the fruit is stoned, and the second swelling commences, the temperature may be raised with safety. Give plenty of water to the inside borders, and continue to syringe the trees up to the time the fruit is ripening; tie in the shoots, so as to expose the fruit as much as possible to the sun, and give plenty of air in bright weather. Attend to previous directions for those not so far advanced.

Cherries: As soon as the fruit begins to colour the temperature should be increased, in order to hasten its ripening; give plenty of water at the root, but keep up a less humid atmosphere, as all the Bigarreau class of Cherries are very apt to split if too much moisture is kept up at the time the fruit is approaching maturity. When the crop of fruit is gathered, remove the trees, and place them for a time in a sheltered situation. Keep them well syringed and watered for a week or two, after which time they can be taken out of the pots, and planted out in the open ground.

Vines: Clear out from the vineries all such plants as *French Beans* and *Strawberries*, otherwise red-spider may become troublesome on the Vines. Still apply fire-heat to all, except the late houses, so that the temperature does not fall below that hitherto maintained, and so continue till the fruit is perfectly ripe, after which time the house can be kept cool and airy. Keep the latest Vines retarded as much as possible, till they show for fruit, when the usual treatment must be given them. Keep the lateral shoots stopped, and the bunches thinned in the succession-house, and syringe and close the houses early in the afternoon. Attend to *Vines in pots*, and see that those in fruit do not at any time suffer from drought. Mulch the surface of the pots with cow or sheep-droppings, and give frequent waterings with diluted liquid manure; remove laterals from the young plants, as well as from those in fruit.

Strawberries: Give plenty of air and water to those in bearing, and place the last lot of plants in cold frames. This must be done at once, to keep up a supply of fruit till such time as they are ripe in the open ground.

Melons: Thin and stop the shoots so that the foliage may have full exposure to air and light. When a sufficient quantity of fruit is set, place glass or tiles

under them. Give plenty of air through the day; syringe the plants, and close early in the afternoon. Plant out those sown last month, and sow again for a *late* crop.

Figs: More air and less moisture should be given when the fruit is approaching maturity. Up to this stage they should be well supplied with liquid manure, especially old trees, and those in pots; thin and stop the shoots, and thin the second crop of fruit if it is considered to be too heavy.

Hardy Fruits: *Apricots* will now require thinning, but at first, double the quantity intended to remain on the trees should be left, deferring the final thinning till the fruit has *stoned* and the crop is safe. The green fruit make good tarts, and are excellent when preserved with sugar. Caterpillars are at this time often very destructive to the young fruit, and if any make their appearance, which the curling of the leaves will indicate, they should be diligently sought for. Keep *Strawberry*-beds free from weeds, and mulch the ground round the plants with litter or short grass, to keep the fruit clean and the ground moist; water in dry weather. Keep a close watch for green-fly on *Peach* and *Nectarine* trees; a good wash can be made with soft-soap and tobacco; 1 lb. of each, boiled in water, will make 15 gallons; strain the mixture through a cloth, and use it with a syringe in the evening. Go over the trees and remove all *strong* shoots that can be spared, but disbudding should at no time be carried on too severely. The fruit in *Orchard-houses* will now be set and swelling; thin the fruit to a moderate crop, and stop the strong shoots; assist the trees by liberal supplies of liquid manure and by top-dressing; use the syringe freely, and give abundance of air in fine weather.— J. POWELL, *Frogmore*.

VEGETABLES.

The cold dry winds which have been of such long duration have left their impress on Spring Vegetables. The supply of some subjects, such as *Asparagus*, that might ordinarily have been anticipated soon after Easter, has been postponed, and as it were, by way of recompense, others, such as *Broccoli*, *Seakale*, &c., have been retarded beyond their customary season. Thus, though the gardener has not suffered in regard to furnishing constant successional supplies of various subjects, a slight deviation from routine spring practice may be requisite to make all right in the end. If I do not err in regard to the inferences the past weather have given rise to, I do not doubt that by and by it will be found that the successional crops of *Peas*, *Broad Beans*, *Spinach*, *Lettuces*, &c., will come in too closely together; for already I perceive that the earliest *Peas*, about to grasp the sticks with their first tendrils, are not so far as they should be in advance of successional ones, and especially does there appear to be a great uniformity of growth and size amongst the *Broad Beans* that are up. This I take to be owing to the fact that all seeds germinated freely, and that so soon as they were through the ground all were held back alike, until the several successional crops are far too even in growth. Hence, so soon as fine weather arrives, and that will be, we trust, some time ere this meets the reader's eye, there will doubtless be a simultaneous rush growthwise, with a doubt as to "which will win." I advise, therefore, that additional sowings should be made of all quick-podding, or quickly-maturing vegetables upon which there is likely to be a demand for a successional supply. In the case of early *Peas*, *Beans*, &c., it may be well to soak the seeds for half-an-hour in tepid water before sowing.

Continue the sowings of the main crops, with despatch, until all are permanently settled and arranged, as no further delay need now be made in regard to sowing any kind of vegetable or herb. Aim always at high and good culture,



W H Fitch del.

Chromo G. Severeijns Brussel.

Begonia Model.

by frequently stirring the soil between all growing crops. Hoe freely and frequently, besides and even following, more substantial forking. Use a strong hoe and move every particle of the surface-soil therewith as deeply as possible, as it is only by these means that the great aid-capacity of the air, along with rain, dews, &c., can exert their full influence. Should dry weather set in, do not spare the water-pot, or the hose, if the garden is so fortunate as to possess one; to wait for rain is to see the crop dwindling from sheer exhaustion. *Potatos* cannot be too freely or too roughly moulded-up, as they delight in having the body of soil moved almost to their base.

Plant out *Tomatos* at the foot of warm, sunny walls towards the 20th of the month, or a fortnight sooner, in instances where some temporary kind of protection against frost can be made available. Cover up all frames, &c., containing forced subjects for the first half of the month, during all still or airless cold nights; when wind prevails it will not be so necessary to cover up, as winds have the power to dispel frosts ere they touch the ground-line.

Prick out in suitable and warm sites, *Celery*, *Sweet* and *Bush Basil*, *Summer Savory*, and similar herbs, or other semi-tender subjects. Cut the whole of the growth of *Asparagus* beds, and do not permit small "sprue" to remain, until all is alike permitted to grow away together. Thin out, and transplant where necessary, early seedling *Broccoli*, *Cauliflower*, and similar subjects, and make successional sowings of the selected kinds. Manure *Globe Artichokes*, and thin out the smaller shoots from each stool, permitting only four of the strongest to remain.

Procure horse-droppings, and mixing them along with stable-litter and sweepings, make up a bed for *Mushrooms* in any sheltered corner out-of-doors. Raise the frames around *Cucumbers*, giving a relay of rich soil, filling in the whole space within the frame, and treading it down somewhat firmly; water more freely, giving more air besides; sprinkle the whole surface of plants and bed about 3 p.m. on sunny days, and shut the lights down close. Remove all litter from *Seakale* plantations which have been forced where grown, and as soon as the stools are again discernible, carefully fork between them.—WILLIAM EARLEY, *Valentines*.

BEGONIA MODEL.

WITH AN ILLUSTRATION.

VARIOUS as have been the forms of the new hybrid tuberous-rooted *Begonias* which have appeared during the last year or two, since the advent of *B. boliviensis* and *B. Veitchii* especially, there have been few, if any, more distinct and more beautiful than the subject of our present illustration, which was awarded a First-class Certificate by the Floral Committee of the Royal Horticultural Society, on September 2, 1874. It was raised in the establishment of Messrs. Veitch and Sons, of Chelsea, to whom we are indebted for permitting our artist to make the drawing from which the accompanying plate has been prepared.

BEGONIA MODEL, like all of its race, is tuberous-rooted. It grows up with a stout, erect, herbaceous stem, which is furnished with narrowly-ovate acuminate sharply-toothed leaves, having the characteristic family obliquity; from the axils of these leaves are thrown up, on rather long and stoutish stalks, so as to

form a considerable head of blossoms, the beautiful rose-coloured flowers, which are not only remarkable for their large size, but also for their perfection of form; indeed, they are so finely modelled, that the variety must be regarded as a true florists' flower, and it is besides of free-blooming and vigorous habit, qualities which add immensely to its value as a decorative plant. We learn from Messrs. Veitch that it is a hybrid of the third generation, the result of in-and-in crossing carried on between *B. boliviensis* and *B. Pearcei* in the first instance, and then with *B. Veitchii*, and afterwards with *B. Sedeni*. The result of this interbreeding was the production of *B. Stella* and *B. Model*, both certificated varieties, out of the same batch of seedlings.

As regards the treatment of this new race of *Begonias*, the Messrs. Veitch inform us that they find the best soil for them is a compost of equal parts of loam, leaf-mould, manure, and sand. They require when growing, or at least they thrive in, a temperature of from 65° to 75° with fire-heat, and accompanied by abundance of air. In sunny weather they should not be shaded except on very hot days when there is no air, and then only for an hour or two in the middle of the day. When at rest, they should have a temperature of 50° to 60°, and be kept comparatively dry.

Some of the hybrids of *B. boliviensis* and the allied race, including the glorious *B. Veitchii*, which is all but, if not quite hardy, have been recommended for summer bedding; and it seems by no means improbable that we shall eventually secure in these a new ornament for our flower-beds and borders. They are in the meanwhile exceedingly valuable acquisitions for in-door decorative purposes.—T. MOORE.

VINES AND VINE-CULTURE.—CHAPTER VII.

DISBUDDING AND STOPPING THE SHOOTS.

IN the commencement, each season, of the growth of the Vine, the first operation that requires to be performed, and to which attention must be first directed, is that of disbudding, as it is termed, and which is in reality a thinning-out and regulating of the young shoots that may appear. This is an operation of some importance, especially in respect to young Vines, as upon its being properly carried out depends the future form or character of the plant. Disbudding is, in fact, the first step in training, although it is practised much in the same manner, long after the form is established. Improper disbudding will counteract the best system of pruning that may be adopted; therefore it should be performed carefully and judiciously. The time for disbudding is just as soon as it may be perceived that there are more buds than are requisite—say, when the shoots are 1 in. or thereabouts in length; but the sooner it is done the better. To allow the superfluous buds to develop into shoots, and then to rub them off, is a clear waste of the energies of the plant. Some cultivators wait until it can be seen where the clusters will be produced before disbudding finally, and this is safe practice with some Vines.

In disbudding a young Vine, or a leading shoot of the previous year's growth, the first care should be for the top bud, the growth from which should be carefully tied in, and preserved from injury, as forming a continuation of the stem of the vine; and in every such case where more than one bud appears, the number must be ruthlessly reduced to one only, all above that number being not only superfluous, but positively injurious.

In the disbudding of a young vine, we also regulate the number of shoots which form the future spurs, as explained in Chapters V. and VI. To allow space for the full development of the foliage, these side-shoots should not be less than 18 in. apart, on each side of the stem; it frequently happens, especially in the case of slowly grown vines, that there are more buds on the stem than are required, so all those that are not required must be rubbed off. Nothing is more pernicious in Vine-culture than the crowding of the shoots and leaves. It is well, therefore, to make a fair beginning, with the proper number, and this is done by disbudding. Careless disbudding, or a rubbing-off of the wrong buds, or of a bud that should have been left—and it is easily done, the slightest touch of the finger will do it—must be guarded against. The loss of a bud like this often means the entire loss of the shoot or spur, and is the source of a permanent disfigurement to the plant. Many vines are rendered quite unsightly and nearly ruined through careless disbudding, and carelessness in tying-down the young shoots, resulting in their being broken off.

Disbudding, also, at times takes the place of pruning. If the lower buds of a young Vine-rod do not break well, it is a good plan to rub off the higher or top buds, and this will induce the others to break stronger. Again, if it has been forgotten to prune a Vine or shoot until it has become too late to do so, the neglect may to some extent be rectified by a careful rubbing-off of the buds as soon as they may appear, back to the point where the shoots ought to have been pruned, and then when the leaves are about fully developed, the sap of the Vine will be sufficiently diverted, and the shoot may be pruned with safety.

Following closely on the operation of Disbudding comes that of Tying-down and Stopping the shoots. The young shoots of a Vine, especially when they are growing vigorously, are exceedingly tender, and easily broken, so that the work of tying them down into their proper position on the wires or trellises to which the plants are trained—for they naturally grow upwards towards the glass—requires a great amount of care and patience. When they are found to be at all brittle, they must only just be inclined or drawn down a little at one time, and so gradually bent or guided into the right position. Practically, however, it is not advisable to tie the shoots so very early; if the leaves are allowed to expand a little, and the shoots to get some of their woody fibre developed, they will be found to bend quite freely into the desired form without breaking.

In reference to stopping the shoots, our illustration (fig. 8) shows the upper portion of a young Vine-shoot, with its bunch of flowers (eventually to become a cluster of berries), as it would appear at this stage. The stopping is requisite in



FIG. 8.—YOUNG SHOOT OF VINE, showing the mode of stopping.

order to keep the plant within certain limits, and thus to prevent overcrowding and a confusion of the shoots. According to the spur system, the main stems being from 3 ft. to 4 ft. apart, the side-shoots, on which the fruit is borne, cannot be allowed to extend to more than 2 ft. in length, or otherwise they must overlap each other. But in fact, the length of shoot has to be regulated by the position of the bunch. The usual practice is to stop it at two joints beyond the bunch, as shown at *a* in our figure, or at one joint beyond (*b*), if there is not space for a greater extension. Practically, the longer these shoots could be allowed to grow before stopping them the better, if there is space for the growth so left to go on for the season, as the greater the quantity of fully-developed leaves, the greater the amount of vigour induced. The operation itself, at the point where it becomes

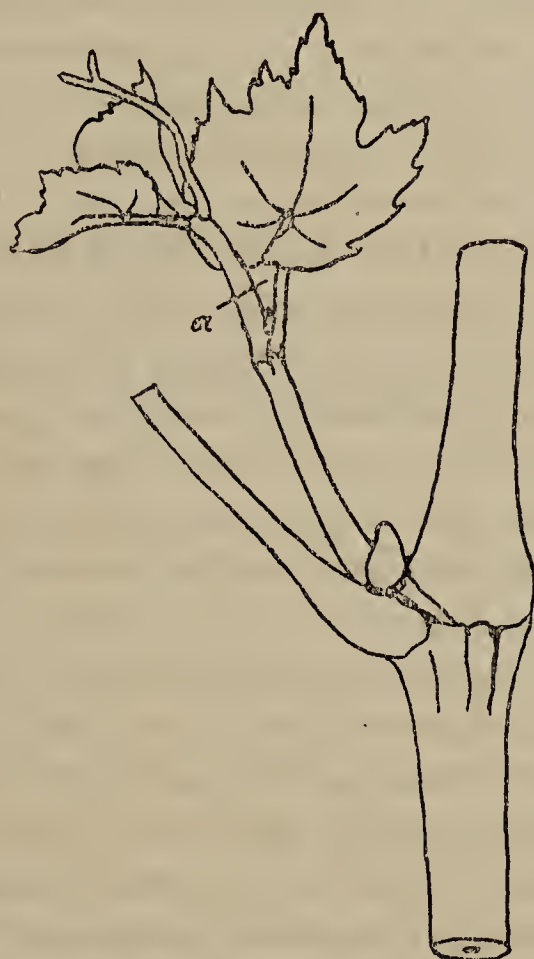


FIG. 9.—LATERAL SHOOT OF VINE, showing the mode of stopping.

necessary, should be performed as soon as the shoot attains the requisite length, and is done simply by pinching it, at the point indicated, between the finger and thumb, before it has become fully developed. There is thus nothing, or scarcely anything, to take off, no denuding of the Vine of a portion of its foliage, and no consequent check to its growth. It is very bad practice indeed to allow the shoots to grow to such a length as to render it necessary to use the knife in stopping them. This is a great waste of the vital energies of the plant. The tendril forming a part of the bunch of fruit should be pinched off at the same time at *c*, as also should the bunch or tendril (*d*) found opposite the first or second leaf above the proper bunch.

After this first pinching or stopping, the foremost buds seen in the axils of the leaves again produce shoots, according to their vigour, as shown in fig. 9.

These second shoots are called laterals, or summer lateral shoots, as shown in Chapter IV., fig. 2, E. (1874, p. 29). They should be stopped in the same way immediately beyond the first leaf, as at *a*, and so on again and again throughout the season, as they may continue to grow.

The leading shoot of a young Vine is, of course, to be exempted from this stopping, excepting in so far as relates to the laterals it produces; and these, if space is limited, must be stopped in the manner just explained, or they may be trained out in the same manner as the proper shoots, and allowed to extend and occupy as much space as may be available. It should always be borne in mind that the greater the quantity of properly developed leaves and shoots, the more powerful must be the root-action, and the more vigorous the plant. The stopping of the shoots of a Vine should not in any sense be considered as a checking or repressing of its vigour, but rather as a guiding or directing of its energies into certain channels of a more desirable and beneficial character than they would follow if left to themselves.—A. F. BARRON, *Chiswick*.

THE ECONOMY OF LABOUR IN GARDENS.

FULL fifty years ago, edges of raw earth were in full vogue as the boundary-lines of grass lawns, verges, &c., adjoining walks, drives, and other roads about a nobleman's or gentleman's grounds and gardens,—that is to say, almost the whole of the grass edgings were cut with an edging-knife, instead of with the shears, once or twice in the year, but more particularly in spring, when the walks and roads were repaired or renovated. Then the line was placed, and the knife or edging-iron set to work, to pare off a thin slice, leaving an even but raw edging, on which the frost, the dry weather, and the parching winds might each exert their influence, as they did most effectually, mellowing, pulverising, and loosening the earth, for the worms to cast up, the ants to work through and through, the birds to scratch down, and the heavy hasty rains and rapid storms to wash away, in order to choke the drains, leaving the soft sediment to settle in the low uneven spots about the walk or road, there to form seed-beds upon which the seeds of grass or weeds that may also have been washed down, might vegetate luxuriantly; or in dry, hot weather, to crack and curl up into skin-thick flakes of dirt. At all events, during the whole year it was but a sorry unsightly edging, for where the soil was stocked with the roots of our wild convolvulus, dandelion, or other obnoxious plants, they would assuredly thrust themselves through, to show their pretty or gaudy flowers, and to seed, too, if left a short time. To be sure, there were here and there to be found little places where by the patient use of large sheep-shears or hedge-shears, for clipping the grass edgings, instead of cutting them with the edging-knife, they were tolerably neatly kept, but such cases were exceptional.

Some forty years since or more, in *Loudon's Gardeners' Magazine*—which was about the only horticultural work in those days in which there was any chance of exposing an abuse, or of relating any useful or practical facts in the way of

improvements, I took to writing down and condemning this system of cutting raw edges to roads and walks. This had the almost immediate effect of doing away in great measure with the absurd custom, driving it, to a very great extent, into the corner of curiosities, and setting men's minds on the improvement of edging-shears, with the result that very soon improved articles were introduced for our use, and these have since been very much further improved, especially in regard to lightness and convenience for expeditious and handy working.

But after all, I have been somewhat surprised in my rambles during the last five or six years to see the old raw-edge system is still practised to a much greater extent than I was led to think, or imagine, could be the case; and that, too, in places where one would not think it likely, in these days of improvement, neatness, and economy of labour, to meet such an ancient curiosity still in vogue.

The greatly improved appearance which results from securing a nicely kept, evenly clipped green grass edging close down to the gravel, or other material of which the walks and roads may be made, instead of the old edging of raw earth, makes it all the more astonishing that we still in some places meet with this slovenly and dirty system. Surely it must be from lack of thought or observation.—JAMES BARNES, *Exmouth*.

NEW PRIMROSES.

THE basket of the beautiful single mauve Primrose exhibited at the February meeting of the Royal Horticultural Society, under the name of *Primula altaica* (which, by the way, it is not), gave an agreeable foretaste of the exquisite pleasure afforded to all lovers of hardy flowers by a contemplation of some of the new varieties of Primroses which have been raised of late. For forty years past, if not longer, this pretty Primrose has been growing in an old rectory garden near Bristol, but how it originated no one knows. It is grown round London as *P. altaica*, but we cannot get infused into it the size and depth of colour seen in the Bristol flowers.

A few years ago I found in an old-fashioned garden in the South of England that beautiful maroon-crimson variety I subsequently named and distributed as *P. vulgaris auriculæflora*, which looks like an Alpine auricula, and which every one who cultivates it so much admires. Finding the last-named seeded a little, I set to work to raise seedlings from it, and though it mostly gave me somewhat inferior repetitions of itself, it yet threw a few seedlings having shades of violet and purple. These were fertilised one with the other, having regard to the necessity for obtaining form and colour, and a few years' work has produced a progeny of great beauty and striking qualities, as those called *Violet Gem*, *violacea*, and *Splendour* bear witness, for they have obtained First-class Certificates of Merit from the Royal Horticultural Society. Almost all shades of colour have resulted, especially in the way of hues of red; two or three of these are particularly noticeable, viz.:—*Gem of Roses*, pale rosy magenta, with golden centre; *Rosy Morn*, rosy crimson, flushed with magenta; and *Sunrise*, fiery-red maroon. All

these have the fine golden centre peculiar to *auriculæflora*. One of my greatest favourites is *violacea*, which has large, bright, rosy-violet flowers, with golden centres; it is a very early bloomer, and extremely free. This season it was in full flower in March, planted out in a cold frame. I winter all these Primroses in this way, planting them in October in a fine light rich soil, in which they can root freely. The lights are kept close only in excessively wet or severe weather, and removed when a gleam of sunshine or breath of mild air can fall on the flowers.

Another cross has brought an extremely interesting progeny. In this case, the above-named single mauve Primrose, which is a pin-eyed form, was made the seed-parent, and *P. vulgaris auriculæflora*, which is a finely-shaped thrum-eyed flower, was the pollen-parent. Some twelve or fourteen seedlings came from this cross, all of them having the habit of the seed-parent, and all of mauve shades, but as a whole, deeper in colour; some pin-eyed, a few thrum-eyed, larger in the pip, rounder and stouter also. Three or four of these are singularly beautiful, and in their improved form, substance, and depth of colour show the effects of the pollen-parent. This season I hope to cross these with *Splendour*, *violacea*, and other fine types, and look for cheering results. We want a fine pure white common Primrose. I have seen several, but the flowers are small, rough, and flimsy. I have, however, two or three seedling whites that are decided improvements, and I hope that in a few years we shall have fine pure white varieties, rivalling *auriculæflora* and *violacea* in size and quality.—R. DEAN, *Ealing*.

PELARGONIUM RIENZI.

IN the accompanying figure it is not difficult to recognise some of the highest qualities which have been secured in the race of Pelargoniums bred between *P. inquinans* and *P. zonale*, and which are familiar in our gardens under the old-fashioned name of Scarlet Geraniums. Dr. Denny, who is the fortunate raiser of this variety, *Rienzi*, has done very much towards improving the flowers of this race, for not only has he, as in this case, realised perfection of form, but he has in some other of his varieties secured another most important property—durability, in consequence of which the petals hold on almost or quite until they wither. The ephemeral nature of the flowers, especially in hot sunny weather, is a serious demerit in some fine sorts, and is specially conspicuous in the variety called Jean Sisley, which is otherwise one of the most charming of the pure scarlets. Mr. Cannell describes *Rienzi* as a robust grower, of good habit, the flowers of a soft slightly-tinted scarlet, in trusses of fair size, freely produced. As regards form and quality of flower, *Rienzi* may fairly claim precedence of any variety hitherto introduced, and to be the true type of a florist's flower, possessing almost to perfection all the prescribed qualities—namely, smoothness of texture, with substance, size, and form, the petals being unusually large, and boldly rounded off, and their size causing them very considerably to overlap each other, in fact to such an extent that the lower petal (which resembles that of the finest pansy) can be removed, and the four remaining ones are sufficient to com-

plete the circle. When well grown each pip exceeds 2 in. in diameter, as may be seen by the accompanying copy of a photograph taken in November, at which season this and many other varieties are in the zenith of their splendour.—M.



PELARGONIUM DENNY'S RIENZI.

GARDEN GOSSIP.

AMONGST the novelties produced at the Royal Horticultural Society's meeting on April 7, was *Geonoma gracilis*, from Mr. B. S. Williams, a slender palm, with finely-cut leaves, having a good deal of general resemblance to *Cocos Weddelliana*, and in regard to elegance of character, running that well-known favourite very closely. Mr. Williams received for it a First-class Certificate, as he did also for another palm, *Martinezia erosa*, a pinnate species, with broad erose-tipped segments, the stem and under-surface of the leaves bristling with dark-coloured slender spines. Messrs. Veitch and Sons had a fine single red *Hyacinth* called *Etna*, one of those in which a few petaloid organs appear in the mouth of the flower-tube, but which are yet scarcely so much as semi-double; it is a fine rosy-red, with the segments remarkably broad, smooth, and plane, the edges being somewhat paler; it had a First-class Certificate. Messrs. Veitch also gained a similar award for *Croton Disraeli*, a very remarkable form of the *Croton*, in which the elongated leaf-blade is widened towards the apex, then suddenly contracted there, while the base is distinctly three-lobed; it is handsomely marked with yellow ribs and veins. *C. Lord Cairns* is similar in form and marking, but inferior. They had also *C. tortile*, a twisted-leaved species in the way of *spiralis*, but dark-coloured; *C. variabile*, a strong grower, with long narrow but irregular leaves, which come finely coloured; and *C. appendiculata*, a

small green-leaved sort, remarkable for the thread-like continuations of the midrib being furnished with peltate terminal lobes. Mr. Bull gained First-class Certificates for two *Dracænas* of dwarf habit, and which in other respects might be grown as a pair, namely, *D. insignis*, which is naturally of small size and close-growing, and has erecto-patent, bronzy leaves, margined with rose or crimson. The other, named *D. candida*, is also a dwarf compact-growing plant, with green leaves, the upper of which are freely variegated with white. A similar award was given to Mr. Bull for *Crinum brachynema*, a tall stove bulb, with handsome drooping fragrant white flowers. Messrs. Veitch also exhibited the fine hybrid *Sarracenia Stevensii*; *Camellia Mathotiana rosea*, a good imbricated rosy-pink form which had sported from the white form; and a white-spathed Arad or Orontiad of some promise, under the provisional name of *Spathiphyllum Wallisii*. Mr. G. F. Wilson had a well-bloomed plant of the pretty Indian *Primula pulcherrima*. Grand specimens of *Dendrobium densiflorum*, with 28 flower-spikes, from Mr. Staples, gardener to Mrs. Candy, of Sevenoaks; and of *D. nobile Wallichianum*, from Mr. Moore, gardener to W. C. Pickersgill, Esq., of Bexley, obtained well-merited Cultural Certificates.

— THE *Per-centage of Improved Novelties amongst Florists' Flowers*, that is to say, the results of cross-breeding amongst this particular class of plants, is thus stated by a correspondent of the *Gardeners' Magazine*:—"Mr. Keynes, of Salisbury, sows every year, and has done for many years past, 30,000 Dahlia seeds, and he has averaged about ten named flowers every year for some twenty years or more, which is a very small per-centage—it is one-thirtieth per cent.; in this case it would seem that many good flowers must be lost, for 30,000 seedling Dahlias ought to give at least thirty varieties worth naming, or, say, one-tenth per cent. The late Mr. John Salter estimated that seedling Chrysanthemums worth naming averaged one in 2,000 plants, or one-twentieth per cent. Mr. Downie grows 500 Pentstemons or Phloxes to get ten first-rate novelties, this being at the high rate of two per cent. In the raising of plants that admit of manipulation, such as Pelargoniums, the rate is still higher, the result, no doubt, of the control the raiser exercises. In the case of Dahlias and Chrysanthemums, the raiser has not much control, but he selects the seed-parents and watches over the growth of the seed, and that is control to some extent. There are cases in which the cross-breeder goes direct to his work, and having in his mind's eye exactly what he wants, ensures it right off; but this is not an every-day business."

— THE subject of *Double or Fasciated Hyacinth Spikes* has naturally reappeared, now that the exhibitions have again come round. An objection was taken that these should not be allowed to be shown as single spikes, but every one knows that the finest spikes are those which come more or less fasciated, and surely no one would wish that the best spikes should not appear at our exhibitions. But as a fasciated spike, usually the result of extreme vigour, is but the early union of two spikes thrown up from one crown, it does not seem very reasonable to reject them, if a similar crown happens to throw them up more or less separated. And if fasciated spikes are admissible, why not those which in their early formation, instead of becoming united, continue as two, three, or even more distinct spikes? It has been objected that the single or the fasciated spike are thrown up directly from the centre of the bulbs; whereas if there are more than one, it is not a single bulb, but two or more confined within an outer sheath, showing in fact the first stage towards a natural division into effects. This is so far true, but surely the produce from what is grown and sold as one bulb, should be admissible for show purposes. The double spikes are no advantage from this point of view, for all judges would prefer the bold well-proportioned symmetry of a really fine single spike to any amount of aggregation.

— THE most noticeable of recent introductions to the gardens at Curraghmore, as we learn from the *Gardeners' Record*, is the *Wellingtonia gigantea aurea*, a fine specimen of which is planted on a circular piece of grass at the termination of a very broad walk, leading from the upper terrace. It is a really grand plant, and is beautifully variegated from bottom to top, and in robust health. Mr. Hartland's stock of this *Wellingtonia* consists of hundreds of fine plants, all splendidly variegated, and growing as freely as its green congener, besides thousands of smaller plants in various stages, all doing well. Being lifted annually, they move well. The original plant of this Golden *Wellingtonia* being a seedling, and not a sport, the constancy of the variegation is not to be wondered at.

— MESSRS. BARR and SUGDEN have recently shown how our town house-tops may be utilised as *Roof Conservatories*, by erecting a very handsome glass

structure over their business premises in King Street, Covent Garden. In this way every householder at least might cultivate his own flowers or fruits, for Vines might be readily grown in such structures, if properly provided with the usual and necessary appliances of heat, moisture, and food. No doubt this is the best position that could be found for a greenhouse in the midst of a smoky town, as it would get all the light possible under such circumstances, and much more than it would in most cases obtain if erected on the ground-level.

— **MR. LADD'S** *Grove of Gardenias*, under glass, at Bexley Heath, is a sight worth seeing. The house is about 140 ft. long by 25 ft. wide, and wholly occupied by Gardenias, healthy, glossy bushes dotted over everywhere with their large and handsome green and white buds. The bushes are planted out, each on a mound of peaty soil, which rests on the hard floor of the house. Each plant stands on a hillock, and thus water may be abundantly used without injury. They do not root into the floor, but each bush finds its nutriment in the barrowful of soil or so in which it is planted. With plenty of heat and moisture, and frequent syringings, the plants grow apace, and there is no mealy-bug—their usual attendant and enemy—to be seen. On the floor and around the mounds the water lies in pools, as it might in a bog. The effect afforded by the bushes is like that of a healthy coffee plantation, though by-and-by, when the white waxy blossoms are opening freely, it will be very different. This and other plantations made by Mr. Ladd seem to point to the probability that much improvement may be effected by planting out subjects usually grown in pots.

— **MR. MEREDITH'S** *Vineyard at Garston* has been sold by the instructions of the mortgagees, the trustees under Mrs. Meredith's marriage settlement, and the trustee in liquidation. It realised £10,000, the purchaser being Mr. John Cowan, of the Cowan Patents Company (Limited), London. The price realised is for the concern as it stands, and does not include goodwill; and though inadequately representing the skill and labour and money expended on the business, is considered a fair value for an establishment so peculiarly situated. Much sympathy is felt for Mr. Meredith in the circumstances that have led to a change of proprietary, and it is hoped that the new owners will continue the Vineyards in their present flourishing state, and maintain in its integrity an establishment that has brought so much repute to English Grape-growers.

— **IN** reference to *Foliage for "button-holes" of Rose-buds*, the variety to be procured at all seasons of the year is very limited. The usual leaf or two of the Fairy Rose and spray of Maidenhair Fern, though supported by fine wires, rarely survive exposure in a hot room for more than six hours without flagging, even if kept in a tube of water; while the Rose-bud, if so treated, will look well for a couple of days. A correspondent of the *Gardeners' Chronicle* remarks that these in winter are so costly that they are worth saving as long as they will last; and he recommends the leaves of starved plants of the sweet-scented Balm of Gilead, *Dracocephalum canariense*, a small branch of which, that he had used, looking still fresh after five days.

— **THE** frequent use of *Apples*, either before or after meals, has a most healthful effect upon digestion. It is said to be better to eat less meat, and more fruit. An eminent French physician thinks that the decrease of dyspepsia and bilious affections in Paris is owing to the increased consumption of Apples, which fruit, he maintains, is admirably prophylactic and tonic, as well as a very nourishing and easily-digested article of food. The Parisians are said to devour one hundred millions of Apples every winter—that is, they did before the war. Whether this estimate is true or not, nevertheless the French are extravagantly fond of Apples and other fruit.

— **THE** old *Clematis montana* is found to be a most useful decorative spring plant, when grown in small pots, flowering freely about April. Both this and *C. indivisa lobata* bloom in dense clusters, and though the blossoms are much smaller than those of the *C. patens* type, they are produced in even larger numbers, which is an important compensatory quality. They may be grown either trained into a small cone by means of a few stakes tied together at the top, or like little loose-headed standards by tying them to a centre stick, and allowing a portion of the top to spread loosely.

— THE following receipt for *Preserving Wooden Labels* is from the *Garden*:—After the wooden labels are made, soak them in a strong solution of sulphate of iron. Let them dry, and place them in lime-water, giving time for the lime-water to permeate the wood thoroughly. Insoluble sulphate of lime will be formed throughout the pores of the wood, which will prevent the absorption of water, and consequently prevent rotting. Twine used for tying up plants may be similarly preserved.

— WE learn from the *Comptes Rendus*, that MM. Becquerel have experimentally determined that the temperature below the soil, when the surface has been denuded, in frosty weather is much lower than when the soil is covered with turf. But it ought to be added that arable land is quickly warmed by the sunshine of spring, while land covered with turf absorbs heat more slowly.

Obituary.

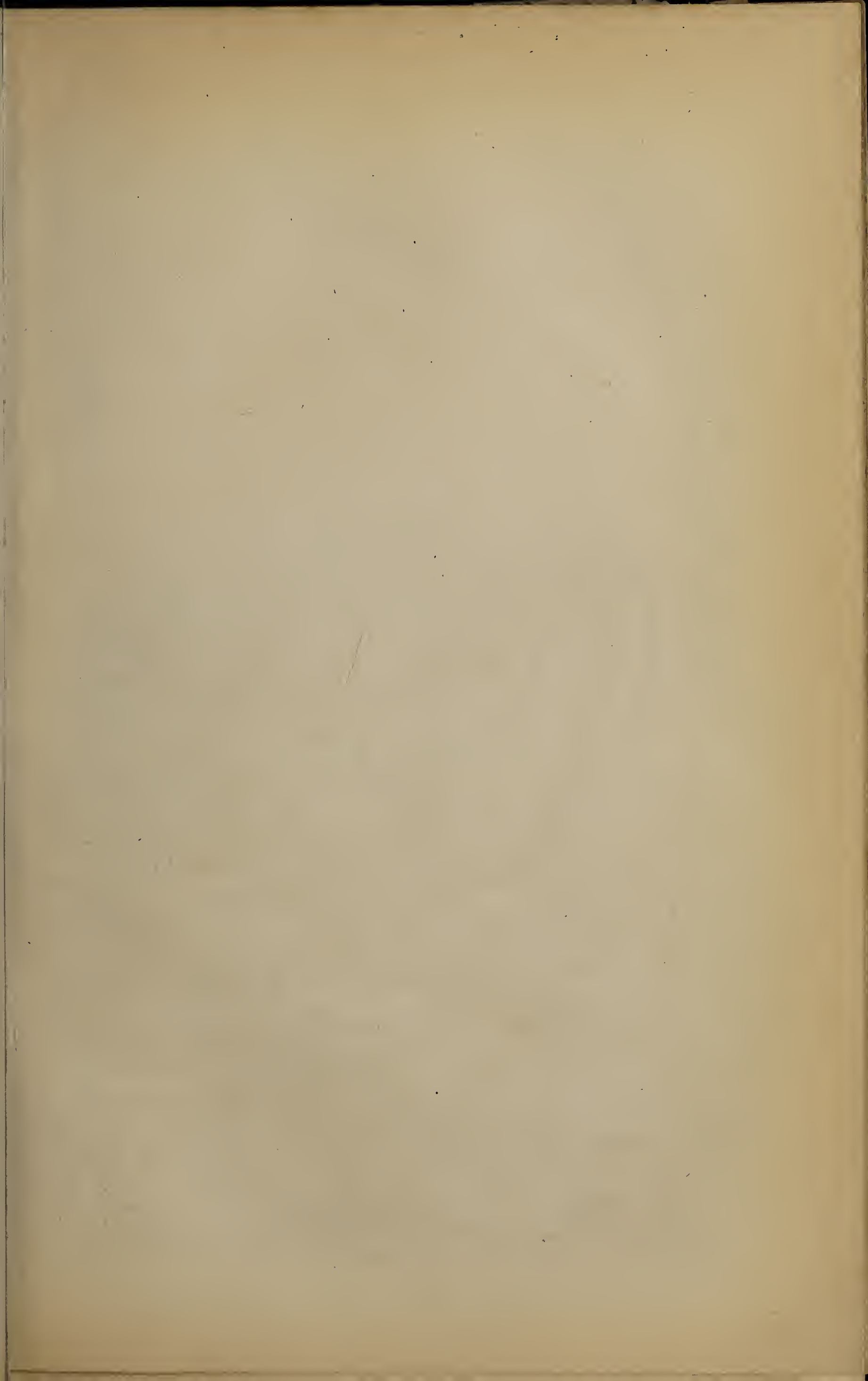
— DR. J. E. GRAY died at his residence at the British Museum, on March 7, aged 75. At an early age he formed a strong liking for natural science, and prepared the systematic part of the *Natural Arrangement of British Plants*, published by his father, in two volumes, in 1821. Dr. Gray was President of the old Botanical Society of London; and he held for many years the position of Keeper of Zoology in the British Museum, which he resigned only in December last. He was a generous friend to science and to those who had scientific tastes.

— MR. ROBERT LANCASHIRE, of Middleton, Lancashire, died on March 12, in his 77th year. He was a sound cultivator of the Auricula, Carnation, Dahlia, and Rose; a thorough florist, and the raiser from seed of that fine Auricula, Lancashire Hero, a variety which has been regarded by leading fanciers as the most perfect hitherto produced, and which will be a leading flower in collections for years to come.

— MR. J. D. HEXTALL, of Ashby-de-la-Zouch, died on March 25, aged 87. He was an enthusiastic cultivator of Tulips, Carnations, and other flowers, and his pleasant face, beaming with good-humour, was constantly looked for at the various Shows. At the National Tulip Exhibition held at Aston, Birmingham, in May last, he was as devoted as ever to his work, though suffering from failing sight. Time is rapidly thinning the ranks of the old school of florists.

— THOMAS BEWLEY, Esq., died at his residence, Rockville, Blackrock, near Dublin, on April 5. Mr. Bewley's name has been long known in connection with horticultural affairs, and as cultivator of Orchids, Ferns, and other plants, he was remarkably successful; indeed, the collection now existing at Rockville is, perhaps, second to none in Ireland. In private life he was greatly esteemed among a wide circle of friends, for his kindness, benevolence, and generosity, and in him horticulture has lost one of its most liberal, genuine, and staunch supporters.

— DANIEL HANBURY, Esq., died on March 24, at his residence at Clapham Common. Amiable, accomplished, profoundly versed in his own special department of pharmacy, still in the prime of life, having done excellent work, capable and willing to do good service to science and to his fellow-creatures, he has been suddenly removed from us, leaving behind him an example to be followed, and a memory to be cherished. Mr. Hanbury was one of those who raise their business and themselves to a higher level than that of mere money-getting. His original investigations into the nature and history of drugs, and of the plants producing them, were minutely accurate, and his record of them was as judiciously terse. His *magnum opus* was the *Pharmacographia*, published quite lately in conjunction with Professor Flückiger, of Strasburg. His brother's garden at La Mortola—a veritable garden of acclimatisation—afforded him ample opportunity for indulging his gardening tastes, and in its formation, stocking, and management, Daniel Hanbury took the greatest interest. He was in his 50th year.





W H Fitch del.

Echeveria Peacockii.

Chromo. G. Severeys Brussels

ECHEVERIA PEACOCKII.

WITH AN ILLUSTRATION.

FOR the opportunity of figuring this very handsome species of *Echeveria*, we are indebted to J. T. Peacock, Esq., of Sudbury House, Hammersmith, by whom it was imported, after whom it is named, and by whom it was first flowered in this country last July. It will be seen from our figure that it is one of the most remarkable of the family to which it belongs. It was originally described by Mr. Baker, in the *Gardeners' Chronicle* (1874, ii., 258), under the name of *Cotyledon Peacockii*, and from this source we glean the following further particulars respecting it.

This well-marked new species, which was discovered by M. Benedict Roezl, in New Mexico, comes nearest to the familiar and now widely-spread *Cotyledon pumila*, and rivals it in the intensely glaucous colour of its leaves and the persistence of their waxy coating, but it may be readily recognised at a glance by its larger size, much broader leaves, and spicate not ramose inflorescence.

It is stemless, with about 50 obovate-spathulate leaves, forming a rosette about 6 in. broad and 4 in. high, the outer leaves 2-2½ in. long, mucronate, slightly red towards the tip, densely persistently glaucous on both sides, the face in the outer spreading ones flat, in the inner rather concave, the backs faintly keeled. The flower-stem is lateral, slender, terete, reddish-brown, rather glaucous, a foot in height beneath the flowers, furnished with a few lanceolate appressed bract-like leaves; the spike itself is scorpioid, a foot long, the bright red flowers distant below, close-set above, with glaucous lance-shaped bracts having two spurs at their base. The calyx-segments are linear, unequal; the petals lanceolate acute, united at the base into a turgid hemispherical cup.

We believe the stock imported by Mr. Peacock has passed into the hands of the Messrs. Rollisson, of Tooting. The same plant has been recently exhibited under the name of *E. Desmetiana*. It has obtained a First-class Certificate both from the Royal Horticultural and Royal Botanic Societies.—T. M.

THE CULTURE OF WALL-FRUITS.

CHAPTER III.—ROOTS.

BEFORE leaving the subject of the Roots, I would call attention to another instance of the manner in which the condition of the branches of fruit-trees is apparently very much influenced by that of the roots, under a system of natural development, where the hand of man has not interfered to turn aside their original tendencies. Thus, supposing the seed of any of our stone-fruits, or the pip of an Apple or Pear, to be placed in a favourable position for growth and future development, we shall find that after it has become sufficiently acted upon by the moisture in the earth, one of its first indications of vitality is to strike a tapering or tap-root directly downwards, and seeing that this is unattended by any simultaneous upward development at first, it is evidently of design,

in order that the preliminary stage of vital development shall be that part of the future plant which is intended to perform the important office of fixing it firmly in the ground. Moreover, as soon as this root is developed, its office of feeding commences; the two halves of the seed are thrust up into the light and expand, and from the germ between them, which is the true axis of the physiologists, springs up a central stem, which soon begins to develop foliage; and from that time the principle of reciprocal action is established. Deeper and deeper the root penetrates into the earth, and higher and higher upwards grow the branches and foliage, each more or less, according to the constitutional tendencies of the plant,—some making a large development from seed the first year, others only a weak one, though the principle of action is alike in both.

The tendency of this process, if allowed to continue, would be a large development of stem upwards, and a corresponding development of the tap-root downwards, and these exactly fulfil all the conditions necessary for the production of fine timber-trees which are never to be disturbed until utilised. But this natural process of development is entirely to be avoided in the culture of fruit-trees under control, and therefore one of the first operations connected with the preparation of stocks for fruit-trees, which are raised from seed, is to cut off the tap root to within 3 in. of the collar, or even less, if there are plenty of small rootlets radiating from below the collar; if more than this is left, the chances are that there will be a tendency to the formation of other large deep-striking roots, to the exclusion of the small radiating roots which it is so desirable to keep near the surface, so as to secure the full benefit of atmospherical influences.

Nothing can well be worse for the operator than the presence of three or four large roots piercing deeply into the earth, and causing the trees to put forth a strong growth of unfruitful wood. All the operations connected with defoliation and branch management, or surface-dressing, or root-pruning by the ordinary method of cutting a deep trench all round the tree, will be rendered nugatory by the influence of these roots, and the only safe course is to lift the tree entirely out of its place, and remove the offending members. Practical instruction on this subject of root-pruning will, of necessity, be interwoven with other details of practice, as we proceed with our subject.

I have been thus particular in remarking upon the various tendencies to be counteracted in the roots, because the management of these is quite as important as that of the branches. The gardener—whether professional or amateur—will find a great advantage to result from studying these natural tendencies, and the way in which they react upon the growth. Indeed, without some such knowledge, success in very many cases will be more the result of chance, than of design following upon intelligent management. Such knowledge, too, will enable the operator to avoid a blind adherence to what may be considered as generally established points of management, but which may often be advantageously varied in their application by bringing intelligent observation to bear on the subject. I have noted many instances where the knife has been freely used upon

vigorous growing fruit-trees, and the result has been what appears to be a leading notion in the minds of some operators, the production of a fine-looking symmetrical and well-furnished tree, but year after year very little fruit, although frequently such trees produce a fair supply of blossoms. In such cases, from the vigorous habit of the tree, and the consequent copious supply of sap from the roots, the blossoms are thrown off, and the sap passes onwards to the production of more wood and foliage. Hence may be inferred the absolute necessity of establishing as complete a control over the growth of the roots as over that of the wood, and to do this in an intelligent manner we must be guided by a knowledge of the first principles which, in the foregoing chapters, I have endeavoured to make plain to the best of my ability. In succeeding chapters I hope to take the different sorts of wall fruits in detail, because, although there are general principles applicable to all, the application of them varies in detail, and it is by this that practice must be guided.—JOHN COX, *Redleaf*.

LANTANAS AS BEDDING PLANTS.

THESE charming plants make a most delightful feature in the flower-garden during the summer months, either planted out in beds or singly in borders. They succeed well in any rich loamy soil. They are very free growers, and produce their heads of flowers of various colours in great abundance. They will not endure much frost, and as the plants are generally very fine towards the autumn, some of the best should be carefully lifted with balls, potted, and put into a pit or frame for a few days, when they should be removed to the greenhouse, where they will continue in flower for several weeks. They are readily increased by cuttings, put into sandy soil, and plunged in a little bottom-heat. A stock of cuttings should be struck in the autumn, and wintered on the shelves of a greenhouse; or the old plants, kept over winter, if put into an early vinery, will quickly furnish an abundance of young shoots, which, if taken off, inserted in sandy soil, and plunged in a little heat, will soon strike, and if potted off will make good plants for putting out-doors. Some of the varieties are so very striking and beautiful, and are so useful for cutting, that no garden should be without them, more especially as they are so readily increased and so easily wintered.—M. SAUL, *Stourton*.

CHAMÆROPS EXCELSA.

AMONG the hardier of the Fan Palms, the first place must be assigned to the genus *Chamærops*, of which several species are commonly cultivated. The subject of the accompanying illustrations, *C. excelsa*, is a native of the middle and south of China; it has a stem of from 8 ft. to 12 ft. high, bearing leaves which are digitately multipartite, and attached by petioles which are unarmed or denticulate, and it produces dioecious flowers. The accompanying figures, indeed, which originally appeared in the *Revue Horticole*, were prepared by M. Carrière in order to show the very great difference which exists between the



CHAMÆROPS EXCELSA MASCULA.



CHAMÆROPS EXCELSA FÆMINA.

plants of the different sexes when they reach the flowering stage, the male plants being, from this point of view, much to be preferred.

In the case of the male plant (*C. excelsa mascula*), the inflorescence consists of a large and ample panicle of a deep yellow colour, at first erect, but afterwards drooping, with robust arcuate ramifications; the flowers small, numerous, very closely set, of a fine deep orange-yellow, with yellow anthers. The female plant (*C. excelsa fœmina*) has a much smaller paniculate inflorescence, which is permanently erect, with distant spreading slender branches, the flowers small, but more distant, and of a greenish yellow, like the rachis. It flowers about April and May, and the seeds ripen from February to April of the following year, thus taking about a year to attain maturity. The accompanying figures show plainly the differences in the inflorescence of the two plants.—M.

HOGG'S FRUIT MANUAL.*

THE third edition of this Manual, forming a hand-book of some 400 pages, was published in 1866. The fourth has grown into an octavo volume of 600 pages, accompanied by 56 pages of outline illustrations, representing 101 select varieties of Apples and Pears. The increased bulk has been made up partly by very numerous additions to the varieties of fruits described, and partly by the introduction of historical notes indicating the origin of many of these varieties, and which add immensely to the interest of the volume. Omitting the smaller and less important fruits, some 300 additional kinds of Apples have been described, about 150 additional Cherries, nearly 500 additional Pears, over 60 Plums, and about three dozen new Grapes. The additions have, in fact, been so numerous and important, that the volume is rather to be regarded as a new work than as a new edition. Moreover, since the author's reputation as a pomologist is an ample guarantee of its general accuracy, it must be regarded as an indispensable book of reference to all who take interest in our cultivated fruits.

Though eminently useful, or indeed, as we have just said, indispensable in the garden library, we must give the author a friendly jog to remind him that the *Fruit Manual* is not yet perfect, and that more is yet expected of him. Some means might surely be found for classifying the varieties of all the different fruits, in such a way as to furnish a tolerably safe and easy means of identifying them—such a classification, in fact, as is given in the case of some of the fruits in the volume before us, under Almonds, Cherries, Plums, and Peaches, for instance, but which is not attempted in the case of Apples and Pears, the two most important of our common fruits. Difficult it may be in some cases to devise a system of classification, but then difficulties only exist to be overcome, and any mode of grouping which would lead up to the names of unknown fruits, would be so practically useful to those who have not had

* *The Fruit Manual*; containing the Descriptions, Synonyms, and Classification of the Fruits and Fruit-trees of Great Britain; with a Hundred and One Engravings of the Best Varieties. By Robert Hogg, LL.D., F.L.S., &c. Fourth Edition. London: *Journal of Horticulture* Office. 1875.

other facilities for becoming acquainted with them that no effort should be spared to realise it. In many fruits, again, Pears especially, there are strongly marked differences of flavour; and we shall never rest satisfied until we get at least a list of the best varieties of each kind of fruit, grouped according to their flavour, of which certain well-known kinds should be put forward as the types. Thus amongst Pears there is the honey-like flavour of the Seckel, the musky flavour of William's Bon Chrétien, the noyeau-like flavour of Beurré Duhaume, the rose-water flavour of Beurré Hardy, the anise-flavour of Amiral, the almond-like flavour of Amande d'Été, and there are certainly other distinct flavours amongst the many sorts classed as sugary, vinous, perfumed, and aromatic. We should be obliged to any of our correspondents who may either have already noted down, or who will at the proper season make exact records on this point, if they would favour us with materials towards the compilation of such a list. It would be extremely useful, for in this way, those who prefer any particular flavour or flavours would be much assisted in making their selections of trees.

One other matter should, we think, have attention in any future editions, namely, the means of identifying the different kind of stocks upon which fruit-trees of various kinds are grown. For the Apple we know there are the French Paradise, the English Paradise, the Doucin, the crab, and others; for the Pear, the seedling pear and the quince; for Peaches, the almond and various plums; for Cherries, the seedling cherry and the Mahaleb; but how little do cultivators in general know about the appearance and the influences of the several kinds of stocks used, all-important though the knowledge must be, as affecting both the permanence and the fertility of their trees. We are almost inclined to think that at least a portion of the plates would have been of more utility than they are in their present form, had they been devoted to the full illustration of the various fruit-tree stocks, so far as to afford the means of identifying them. A reference to accessible figures of standard fruits would also have taken little space, and been most useful to fruit-students.

Though mentioning these as features which, if added, would certainly improve the *Fruit Manual*, and which we hope to see adopted hereafter, we nevertheless, in the meanwhile, thankfully accept the book as it is; and we close it with the conviction that it is the best, indeed we might say the only authoritative modern publication on the subject to which it is devoted.—T. MOORE.

A FEW NOTES ON AURICULAS.

 HAVE missed the notes on this fine old flower that used to appear in the FLORIST from Mr. John Ball. No one was better able, from his large experience, to write about them, either as regards culture or the best varieties to cultivate. There is one thing remarkable about this flower, and that is, that the old sorts grown nearly fifty years ago are still the best flowers, with but few exceptions. On comparing a list of the premier flowers exhibited this year at Manchester with another given in an old horticultural journal for the year

1834, I find that the best flowers of that year are to be found high on the list referred to. Taking green-edged flowers first, Colonel Taylor (Leigh) and Freedom (Booth) had the highest marks in 1834; they are still the best green-edged flowers—indeed, Colonel Taylor had the premier prize as the best green-edge in the show at Manchester. Grey-edged flowers have been much improved since 1834; none of the old flowers approach George Lightbody (Headly) or Richard Headly (Lightbody), two grand flowers which are now becoming common; and Alexander Meiklejohn, a new grey-edge, apparently a seedling between Conqueror of Europe and George Lightbody, is also a magnificent flower, and took the premier prize at Manchester as the best flower in the show. Privateer (Grimes), Ringleader (Kenyon), Complete (Sykes), &c., are still shown in the prize collections, and they held the highest positions in 1834. In that year the flower that obtained the highest number of marks in the white-edged class was Glory (Taylor), and this is still one of the best. Pillar of Beauty (Hughes) was the second-best white-edge. In selfs there has been much improvement, still the self that took the premier position at the National Auricula Show—Othello (Netherwood)—was a popular flower in 1834. The highest on the list in that year was Flora's Flag (Grimes), the second-best being Metropolitan (Redmain).

Now, on looking over the lists of other Florists' flowers, such as Pinks, Carnations, Pelargoniums, Dahlias, &c.—this last, by the way, was at the height of its popularity in that year—I find that not one of the flowers are now in the lists. It is not to be supposed that these old Auriculas are more easily to be obtained than the new sorts: in fact, they are more difficult, and not to be bought in the country. The following is a list of the best varieties, new and old:—

GREEN-EDGED.	George Levick (Walker).	Countess of Wilton (Chatham).
Admiral Napier (Campbell).	Miss Giddings (Read).	Omega (Turner).
Apollo (Beeston).	No Plus Ultra (Fletcher).	Arabella (Headly).
Duke of Wellington (Dickson).	Richard Headly (Lightbody).	Bright Venns (Lee).
Freedom (Booth).	Ringleader (Kenyon).	
Champion (Page), very rare.	Robert Traill (Lightbody).	SELFS.
General Neil (Traill).	Lancashire Hero (Lancashire).	Blackbird (Spalding).
Alderman Wisbey (Headly).	Alderman C. Brown (Headly).	Crown Prince (Turner).
Lady Richardson (Gairns).	Unique (Dickson).	Charles J. Perry (Turner).
Lycurgus (Smith).	Unique (Maclean).	Eliza (Sims).
Prince of Greens (Traill), new and rare.	Mary Ann (Fletcher).	Formosa (Smith).
Prince of Wales (Ashton).	Maria (Chapman).	Othello (Netherwood).
Colonel Taylor (Leigh).		Lord Clyde (Lightbody).
	WHITE-EDGED.	Master Hole (Turner).
	Catharina (Summerscales).	Mrs. Smith (Smith).
	Glory (Taylor).	Mrs. Sturrock (Martin).
GREY-EDGED.	Smiling Beauty (Heap).	Vulcan (Sims).
Colonel Champneys (Turner).	Favourite (Taylor).	Petronello (Headly).
Conqueror of Europe (Water- house).	John Waterson (Cunningham).	Pizarro (Campbell).
General Bolivar (Smith).	Model (Gairns).	Metropolitan (Spalding).
George Lightbody (Headly).	No Plus Ultra (Smith).	Topsy (Kay).
Alexander Meiklejohn (Kay).	True Briton (Hepworth).	Lord Lorne (Campbell).

The above list contains nearly all the best flowers that have been exhibited this year. I have finished potting to-day (May 18). The drainage becomes choked, and the rich surface-dressing applied in February becomes sour, and it is as well, therefore, to turn the plants out of the pots, and to repot as soon as

possible after the blooming time is over. The compost used is not rich : a fourth-part of rotted manure, and a small quantity of leaf-mould and sand is added to the turfy loam, just enough to keep it open. Thorough drainage is essential. I find that if any of the plants become water-logged they soon show it. Ventilation is the point next in importance ; give all the air possible at all times, from now until October ; remove the lights from the frames night and day, except when it rains. A gentle shower will do no harm to the green-leaved sorts, but it splashes the meal on the foliage of those that have white leaves.

Propagation is slow work in the case of some of the varieties ; others increase rapidly. When in Scotland last year, Mr. Meiklejohn, one of the largest growers, showed me a plant of Alexander (Stretch) that had not thrown an offset for six years ; it had a long stem, and showed buds where the leaves had decayed. Now, in a case of this kind cut the head off, and pot it in a small pot in some light material ; do not water it for twenty-four hours. Place a bell-glass over it closely for a few days at first, afterwards tilt the glass a little, and with care this top will soon throw out roots, while the old stump will also speedily show signs of life, and many cuttings will be obtained from it. As to cleanliness, green-fly is a serious pest, and must not be allowed on any of the plants. Remove it with a small camel-hair brush, or by fumigating.—J. DOUGLAS, *Loxford Hall Gardens, Ilford, Essex.*

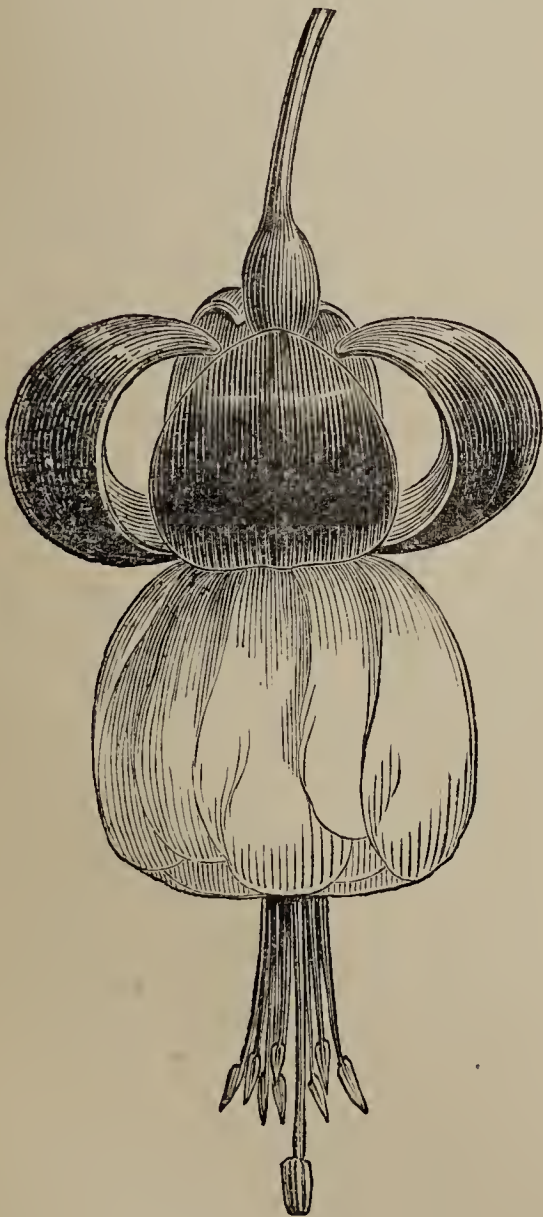
TYING-DOWN VINE-SHOOTS.

IN Mr. Barron's eminently practical remarks on "Vines and Vine-Culture," in the FLORIST, he says, at p. 111, that "the young shoots of a Vine, especially when they are growing vigorously, are exceedingly tender, and easily broken, so that the work of tying them down into their proper position on the wires or trellises to which the plants are trained requires a great amount of care and patience." Mr. Barron is quite right ; the work does require care and patience, which also means considerable time ; and as at this busy season no gardener has more of this to spare than he knows what to do with, I am induced to call the attention of your readers to a method of rapidly and efficaciously getting over this work, which I saw in operation a few days ago in Sir Henry Peek's garden at Wimbledon House. Instead of using bast in the earlier stages of the work, Mr. Ollerhead, the gardener, has called into requisition some tolerably strong copper wire, which is cut into lengths varying from 6 to 18 in., and rapidly made into the form of the letter S, one end of which is put round the trellis-wire, and the other round the shoot. In a few days, the shoot so treated will be strong enough to bear bringing a little lower down, when the S-hook is contracted to the required length, and the work is done in much less time than it takes to describe. When brought down by easy stage into their proper places, the shoots are tied in the ordinary way, and the wire is straightened out and put away for use another year. It is astonishing how quickly a house of Vines may be gone over in this way, and I strongly recommend

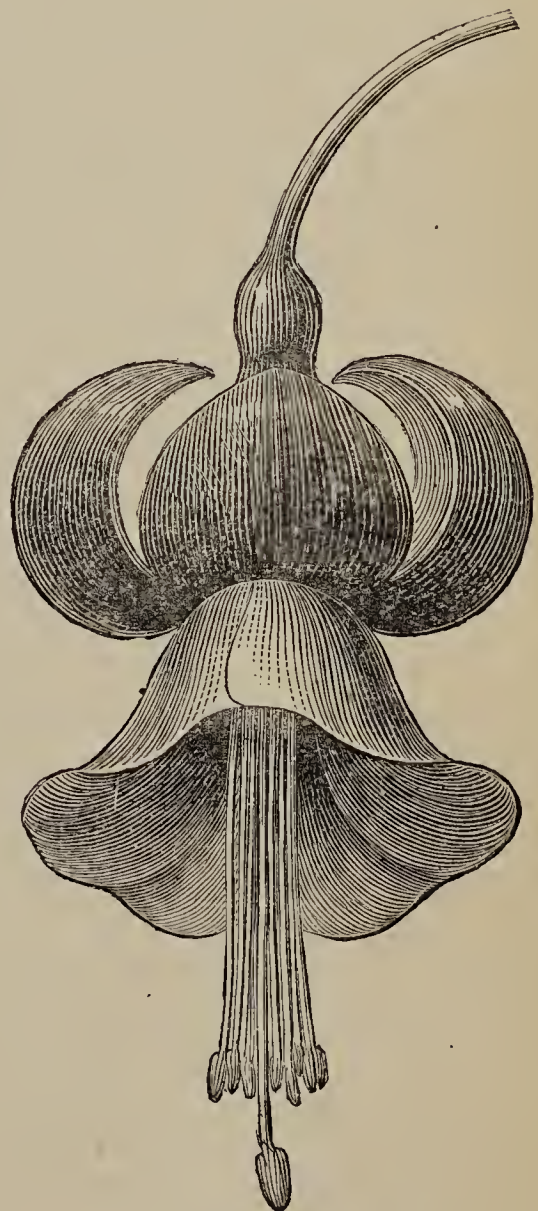
the plan to all who have not heard of it before—those who have done so will not require any recommendation. So far as I can learn, the first person to adopt this plan was Mr. Hopwood, gardener to F. Gye, Esq., Springfield House, Wandsworth Road, one of the largest private growers of Grapes in the London district.—SABINA.

TWO NEW FUCHSIAS.

IF the many novelties amongst Fuchsias which have lately been acquired, few are more strikingly distinct or more desirable than those of which we subjoin illustrations, which have been kindly lent to us by Mr. H. Cannell, who is not only well known as an expert, and also as a first-prizeman in Fuchsia-culture, but who has also, for some few years, been devoting his energies to the establishment of a first-class nursery for the propagation and sale of these and other soft-wooded plants.



FUCHSIA MRS. H. CANNELL.



FUCHSIA SWANLEY GEM.

Fuchsia Mrs. H. Cannell was sent out last year, but is a standard variety which will not soon be displaced. We saw blooms of it in 1873 which were the most perfect we have yet met with amongst the double whites, being remarkable for their large size and faultless form, for the unusual purity of their compactly-

set double corolla, and for the brilliancy of the bold short sepals, which are broad and reflexed in the most graceful of curves. It is said to be quite equal to the best of the dark-coloured doubles in habit and style of growth, and is no doubt a wonderful advance on all of its class that have preceded it. The plant is described as resembling, in every way except in colour, Henderson's *Avalanche*, which is regarded as one of the best *Fuchsias* in cultivation. It was raised by Mr. Swaffield, of Bournemouth.

Fuchsia Swanley Gem is one of the novelties raised by E. Banks, Esq., whose name is as a household word amongst the growers of *Fuchsias*. In this variety the tube and sepals are of a coral-scarlet, the latter being prettily reflexed, while its frilled or wavy corolla is of a beautiful rose-colour. "It very rarely occurs," remarks Mr. Cannell, "that we get any really different shape in the *Fuchsia* that can be said to be attractive, but in this instance the engraving conveys but a very inadequate idea of the beauty of this variety, which must be seen to be appreciated. Depend upon it, this strange shape of flower, and its freedom of blooming and splendid habit, will ultimately make it a general favourite."—T. MOORE.

GARDEN WORK FOR JUNE.

FLOWERS.

THE great majority of sub-tropical plants may now be planted out, provided they have been well hardened off. It will be found of the greatest advantage in encouraging healthful growth to have the soil frequently stirred amongst the plants, so as to keep the surface loose, which will prevent evaporation. Moreover, mulching the surface with light, porous substances cannot be too strongly recommended, since it promotes most fully that equable state of moisture which is so congenial to plants, and so conducive to healthy development during excessive droughts, with the least possible amount of labour in watering. Timely attention must be directed to the training of plants in general, for without they are guided into the desired forms when young, perfect outlines are more difficult of realisation afterwards. Keep *Dahlias* securely tied to their stakes, mulching around the roots of these, as well as *Hollyhocks*, with rotten manure, and thinning out the shoots. *Hollyhocks*, if grown for exhibition, should have the flower-spikes thinned out to from three to one upon each plant, according to their strength. Thin out the flower-stems of *Carnations*, *Pinks*, and *Phloxes*, tying them neatly to stakes as they progress in growth. Give attention to the thinning-out of *Annuals*. Sow seeds of *Brompton* and *Queen Stocks*; and make successional sowings of *Mignonette*, and of the choicest hardy annuals for autumn blooming amongst herbaceous plants. Pick off the seed-pods from *Azaleas*, *Kalmias*, and *Rhododendrons*, as the blooms decay.

Roses should have strict attention in keeping under green-fly and caterpillars, and in removing weakly and deformed buds, which will greatly increase the vigour of such as are left. Encourage with liberal applications of strong manure, which will be most accelerating at this season. Hoe and otherwise keep in check weeds upon borders and walks, and keep lawns closely mown, with neatly clipped edgings, bearing in mind that without the high polish of perfect keeping there is always a something lacking, and the result does not yield satisfaction.

Conservatory: *Clerodendrons*, *Achimenes*, *Gloxinias*, *Bougainvilleas*, and other

stove-plants may now be removed to these structures, where they will form most important objects for a length of time, if guarded against sudden checks. *Fuchsias* will now form prominent features in conservatory decoration, and from their profusion of bloom and graceful habits they are still unsurpassed for this purpose. Plants that are permanently planted out in these structures will now require liberal applications of manure-water, and strict attention in keeping under insect pests, which will become troublesome, particularly in the case of climbers.

Greenhouse: Soft-wooded plants, which are intended for winter-flowering, should be forwarded with as little check as possible, shifting them on as they require it, guarding at all times against over-potting, as early and perfect maturation is the chief point to attain with these. *Bouvardias* do best when planted out in an airy frame during the summer months, with the lights removed as soon as they are established; they grow then much stronger than they do confined in pots, and are less trouble; timely attention must be given to the pinching-back the gross shoots, so as to ensure compactness of habit. Hybrid *Solanums*, which are so useful for winter decoration, may now be planted out; also *Salvia splendens*, and the various *Veronicas*, which grow more freely when so treated, repotting them in autumn when they are set with bloom-buds. Attend to the potting of *Cinerarias* and *Primulas*, and shade from bright sun. *Celosias*, *Cockscombs*, and *Balsams* should have liberal treatment, and be kept near to the glass.

Auriculas should now be repotted, using 5-in. or 6-in. pots, thoroughly drained, and potting in good mellow fibry loam, leaf-soil, and thoroughly rotten manure in about equal parts, with a free admixture of charcoal and sand, to ensure a healthy mechanical condition of the compost; place them after potting in a shady situation, and water moderately.

Azaleas, as they go out of bloom, should have the seed-pods removed, and be examined and repotted should they require it. They must be encouraged to make *fresh* growth in a brisk, humid atmosphere. Such as were started early will be now in an advanced state of bud-formation, and should have freer ventilation, guarding against sudden checks, which induce secondary growth.

Stove: Autumn-struck cuttings of stove plants, such as *Ixoras*, *Gardenias*, *Allamandas*, *Clerodendrons*, *Bougainvilleas*, &c., should be shifted on before they become pot-bound. Gross-feeding plants, such as *Caladiums*, *Hedychiums*, *Eucharis*, &c., that are growing in a brisk temperature should now have an abundance of water, with frequent applications of weak manure-water to free-growing subjects. Continue to propagate *Poinsettias*, *Aphelandras*, &c., which are required in quantities, shifting them on as they become rooted. *Begonias* are most valuable decorative plants, which should have every encouragement. The tuberous-rooted kinds are very effective, and being so hardy, they thrive best in a moderately heated structure, with an abundance of ventilation. When kept in a close, muggy stove, they are very apt to rot off at the root. Regulate free-growing creepers, and keep under insect pests.—GEO. WESTLAND, *Witley Court*.

FRUITS.

Peaches and Nectarines: Plenty of air should be admitted where the fruit is ripening, in order to give to it colour and flavour. After the crop is gathered, the trees should be gone over, and all useless shoots cut out, the borders being watered, and the trees exposed as much as possible. An increased temperature may be given where the fruit is swelling. Water the borders and use the syringe freely to keep red-spider in check. Late houses will require plenty of air and water.

Pines: Avoid much shading, also strong bottom-heat. Shift the young stock as they may require it, and in so doing use free turfy loam, with a little

rotten manure ; do not *press* the soil too firmly in the pots. Give a liberal supply of water to those in free growth, as well as to those in fruit, with occasional waterings with liquid manure. Maintain the requisite moisture by syringing the plants at closing time, and keep the temperature as before advised.

Figs : Reduce the moisture where the fruit is ripening, and as soon as the *first* crop is gathered, go on with syringing and watering as before, closing the house early in the afternoon at a temperature of 80° . Thin the second crop, if considered too heavy. Waterings of liquid manure at times will be beneficial to those in pots, as well as to old trees.

Melons : Give good soakings of water where the fruit is swelling, and keep the shoots thin ; stop and earth-up advancing crops. Abundance of air is needed in good weather. Avoid *shading*, if possible ; syringe the plants in the afternoon of warm days, and close the frames early.

Strawberries : If any pots remain on hand, place them in cold frames at once to ripen off their crop ; these will probably keep up the supply of fruit till they are ripe in the open ground ; give them plenty of water. Prepare for layering in small pots the runners for forcing next year, as soon as they can be had.

Vines : In the early vinery, where the fruit is perfectly ripe, the house should be kept as cool as possible to prevent the fruit from shrivelling. Late Vines should have a little fire-heat when they are in flower, if the nights are chilly ; and if mildew make its appearance, use dry sulphur on the parts affected, and keep the house a little warmer and dry for a few days. Muscats should be assisted with a little fire-heat except in hot weather, so that the temperature does not fall below 70° at night ; it may rise to 90° in the day-time during sunshine. Vines in pots should have every assistance by manure-water and mulching ; plunge the pots or otherwise, and shade them from the sun.

Hardy Fruit : June is always a busy month in this department. All trained fruit-trees will require going over often, the fruit thinned, and the points of the strong shoots pinched out, or the shoots themselves removed altogether, according to circumstances. Wall-trained *Pears* especially should be looked to in time, and the young shoots thinned and stopped to admit air and light among the fruit and foliage ; this will also greatly facilitate the formation of fruit-buds for another season. *Peach* trees, if the weather is favourable, will now be making rapid growth ; the thinning and stopping should, therefore, go on, but *not* too severely ; always retain sufficient foliage to give partial shade to the main branches, otherwise a hot June sun may scorch them, and do a lasting mischief to the trees. Use the garden engine occasionally, and dust with sulphur if any *mildew* makes its appearance on the shoots. Look over *Gooseberries* and *Currant* bushes, and watch for the attack of caterpillars ; hand-picking will soon rid the trees of these pests. Thin the shoots in the centre of *Currant* trees, and stop the remaining shoots, which will check the ravages of fly ; manure-water will greatly assist the trees and fruit at this period of growth. If the weather sets in hot and dry at the time *Strawberries* are swelling and ripening their fruit, they will require water frequently ; tie up the heavy fruit to small sticks, more especially those of varieties that do not *colour* well at the point ; they will well repay the trouble. Give plenty of air and moisture to *Orchard-houses*, and keep the trees well supplied with water at the root. Give liquid manure to all fruit-trees that are weakly or carrying heavy crops of fruit.—J. POWELL, *Frogmore*.

VEGETABLES.

During the present month this department should be mostly filled up with crops in the zenith of their growth, and the chief anxiety will therefore be to.



J. L. Macfarlane, del.

Peach Condor.

Chromo G. Severeys Brussels.

keep all free from weeds, and to get each kind requiring such aid finally and permanently thinned out. Nor must there be a lack of artificial waterings, should the weather prove at all dry, as it is at this particular time, when all subjects are in full growth, that such aids are of so great importance. Let all superficial waterings be given freely, either in the very early morning or evenings of warm dry days, and if diluted manure-water can be used, so much the better.

Attend to the necessary transplanting of *Autumn Cauliflowers*, *Broccolis* (the Walcheren and Snow's Winter White), *Brussels Sprouts*, *Coleworts* (such as Rosette and Little Pixie), &c., always taking advantage of a showery period to do so, as the seedling-plants succeed infinitely better when transplanted thus than they possibly can do when "set out" during hot arid weather. Pinch back the points of Broad Beans immediately the blooms have "set" and the young pods have formed. Make successional sowings of *Dwarf French Beans*, *Broad Beans* (of the Early Long-pod section), *Peas*, *Carrots* (of the Early or Short Horn kinds), to insure a successional supply of young tender produce. Keep all recently planted-out *Tomatos*, *Vegetable Marrows*, *Capsicums*, *Ridge Cucumbers*, *Sweet Basil*, &c., all of which should have been planted out with the advent of the month, well watered, that they may make a strong healthy start, as according to the earlier growth, whether robust or weakly, so will be the future success, or otherwise of the crops. Towards the middle of the month the last spring or early-summer sowings of *Spinach*, *Turnips*, *Cabbages*, and *Cauliflowers* should be made, and if possible, upon a cool moist site; always doing this if possible in showery weather. It is desirable also to sow during such periods, a batch of *Lettuce*, of *Endive*, and of *Radishes*, as catch crops, and to assist the regular periodical sowings, because even though they may be sown within a week or two of other similar sowings, they invariably become fit for use, and prove often the more meritorious productions, at a time distinct from the others, and will generally stand more hot sunshine than such as "come up" under less kindly circumstances.

Give to all *Cucumbers* abundance of air at this time, both by day and night; and supply daily libations of tepid water about 4 p.m., immediately before shutting down the frames, to encourage a constant and free growth. Finally, transplant the earlier trenches of *Celery*; let the trenches be very liberally manured, and souse them thoroughly with water immediately before and after planting. It is customary to form early trenches upon ground from which the early crop of *Peas* has been picked. Our plan has been to dig the trenches out during the winter, upon the ridges of which crops are grown.—WILLIAM EARLEY, *Valentines*.

THE CONDOR PEACH.

WITH AN ILLUSTRATION.

WE received the specimens of this handsome Peach from which our drawing was made, last summer, from Messrs. Rivers and Sons, of Sawbridge-worth. The sample we obtained was about medium size, of a roundish, depressed figure, with a deep suture, terminated by a small nipple-like point. The surface was very finely downy, and the whole fruit tinted as if washed over rather lightly with pale rosy-red, the colour not being very dark at any point, while towards the crown it became a little marbly. The flesh was whitish, slightly blotched with red about the stone, and very juicy, rich, and piquant in flavour.

Our examples were received about the end of July, and had therefore probably been grown under glass. The variety is said to have been raised from Early Silver,

and to be a large peach, of a bright crimson-colour, ripening early in September. The glands of the leaves are reniform.—T. MOORE.

TENACITY OF LIFE IN A VINE WITHOUT ROOTS.

DURING the past winter a new Vine-border was formed, and when the old and apparently worn-out Vines were cut out, a piece of the stem of one of them was inadvertently left in the opening in the front wall, where the Vine passed from the border into the house. From this two strong eyes burst forth into the structure, no doubt stimulated by the heat from the pipes along the front, which were warmed to keep out frost from plants wintered in the vinery; an examination was made to find roots, but the stem was found cut across by the front plate, and quite rootless. As the border was formed, soil was placed close up to this piece of wood, and in the course of a few weeks the Vines have grown with great vigour, and are nearly at the top of the rafters. They are very strong, short-jointed, and healthy. When sunny weather set in they flagged for a few days, but afterwards recovered, and grew with increased vigour. Young plants which were planted in March are not half the length of the two rods from the piece of old stem, and not nearly so strong. An old Vine which was cut and thrown into a position where there was a little warmth, threw up some strong shoots about a foot high before they drooped. Judging from these and other facts, I do not think it necessary to warm the Vine-borders before the Vines are set to work with heat and moisture.—OBSERVER.

GORDON'S PINETUM.*

IN this volume we have the one standard English book which is devoted to the Coniferæ; and in this new edition, which is supposed to be posted up to the present date, those who take interest in the study and cultivation of this noble order of plants will find all the most important novelties described. The author had ample opportunity, in his capacity of Arboretum Superintendent at Chiswick, to lay a good foundation, upon which his more modern observations have been built up, and hence we have a book which those who desire the information may take as a reasonably safe guide to a true knowledge of these plants, though upon particular points, especially on questions of affinity, other authorities may hold different views.

The Introduction contains a useful classified table of the genera, which would, however, be improved if, by means of a change of type or a synoptical arrangement, the distinctive characteristics of each genus had been more clearly indicated. In the text the genera are taken up alphabetically, while the species, whenever numerous, are grouped in sections. It is thus very easy to find the description of a particular plant, even without recourse to the full index of specific names, which forms a very commendable feature of the work.

* *The Pinetum: being a Synopsis of all the Coniferous Plants at present known, with Descriptions, History, and Synonyms, &c.* By George Gordon, A.L.S. Second Edition. London: H. G. Bohn, Henrietta Street.

In dealing with the species, it would, no doubt, have again been an advantage had the distinguishing features of the several kinds been more clearly brought out. As it is, they are all fully described on a nearly uniform plan, and hence in the descriptions whole sentences are identical, or nearly so, and one has to wade through a flood of words in order to find out the real distinctions. A synoptical table under each genus, or the use of a different type for the characteristic features, or a short specific character, would have greatly assisted the reader in making use of the book.

The genera treated on, including the *Taxaceæ*, are 42 in number. Of these the number of species described is as follows:—*Abies* 20, *Actinostrobus* 2, *Araucaria* 7, *Athrotaxis* 4, *Biota* 3, *Callitris* 1, *Cedrus* 3, *Cephalotaxus* 4, *Chamaecyparis* 1, *Cryptomeria* 2, *Cunninghamia* 1, *Cupressus* 17, *Dacrydium* 9, *Dammara* 9, *Diselma* 1, *Fitzroya* 1, *Frenela* 25, *Glyptostrobus* 1, *Juniperus* 41, *Larix* 10, *Lepidothamnus* 1, *Libocedrus* 4, *Microcachrys* 1, *Nageia* 8, *Pherosphæra* 1, *Phyllocladus* 2, *Picea* 24, *Pinus* 92, *Podocarpus* 59, *Pseudo-Larix* 1, *Retinospora* 11, *Saxegothæa* 1, *Salisburia* 1, *Sciadopitys* 1, *Sequoia* 1, *Taxodium* 3, *Taxus* 7, *Thuiopsis* 1, *Thuja* 6, *Torreya* 3, *Wellingtonia* 1, *Widdringtonia* 5. Of many of the most popular species, numerous varieties are noted, and the addenda considerably augments the number of these latter. We are, however, surprised to find Mr. Waterer's now well-known *Cupressus Lawsoniana erecta viridis* appearing only in this addendum, since its merits as the premier plant of its class have now for some years been fully recognised; while *Wellingtonia gigantea aurea variegata*, distributed many years ago, only finds a place in a foot-note to the index, and the pendulous variety of *Wellingtonia*, and the new *Pseudotsuga Davidiana*, published some year or two since in the *Revue Horticole*, are not mentioned at all.

It will probably be remembered by Coniferists that a few years ago the Pine family (*Pinus*) was inundated by a torrent of so-called new species, of which seeds were brought from Mexico, and distributed by M. Roezl. The utility of such a book of reference as this, in order to check this random species-making by the dissemination of more correct views as to the status of these plants, will be apparent when it is mentioned that, in the five-leaved section alone, no fewer than 92 of these names are placed as synonyms. Thus we have two under *Pinus apulcensis*, four under *P. Buonaparteæ*, five under *P. Devoniana*, eleven under *P. filifolia*, fourteen under *P. Hartwegii*, nine under *P. leiophylla*, four under *P. Lindleyana*, two under *P. Loudoniana*, three under *P. macrophylla*, four under *P. Montezumæ*, one under *P. Orizabæ*, four under *P. protuberans*, seventeen under *P. Pseudo-Strobus*, seven under *P. Russelliana*, and five under *P. Winchesteriana*. We could have wished, however, in the case of the synonymy generally, that along with the names, a reference to the works in which they are published had been given; also that a record should have been made of authentic figures, of which a good many are now scattered through our garden literature.

The omissions and shortcomings which we have briefly pointed out are comparatively slight blemishes in so comprehensive a work as that under notice, in

which the cultivators of Conifers get, at least, an honest, if somewhat wordy, account of the Coniferous plants at present known, accompanied by useful notes of their history and habitats. From this point of view, the volume may, indeed, be safely recommended for its eminently practical character; nor should mention be omitted of a very full and learned index of popular names which has been added to it by the publisher, Mr. H. G. Bohn.—T. MOORE.



BLUMENBACHIA CORONATA.

THIS pretty dwarf annual Chilean plant has been offered for sale by Messrs. Haage and Schmidt. It appears to have been described by Presl under the name of *Caiophora absinthifolia*, the name of *Loasa coronata* having also been given to it by Gillies, and that of *Caiophora coronata* by Hooker and



BLUMENBACHIA CORONATA—flower, natural size.

Arnott. This latter genus is placed by modern botanists as a sectional group, under *Blumenbachia*.

It is of prostrate tufted habit, with short adscendent branching stems, rising from 1 ft. to 2 ft. in height, these, as well as the upper surface of the opposite long-stalked pinnatisect leaves, being hispid with stinging hairs, while the under-surface is furnished with glochidiate or hook-pointed hairs; the leaf-segments are bipinnatifid, with linear-lanceolate acute denticulated lobes. The flowers are solitary, on axillary peduncles longer than the leaves, large, coronet-shaped, and of a bright orange-red colour. The species is found on both sides of the Cordillera, at an elevation of 8,500 ft. to 11,000 ft. We are indebted to Mr. Cannell and to Messrs. Hooper and Co. for the accompanying illustrations.

The subject of this note must not be confounded with the handsome Peruvian plant recently exhibited and sent out by Messrs. Veitch and Sons under the false name of *Caiophora coronata*, which had been by some mishap attached to it at Kew, but which Dr. Hooker has since shown in the *Botanical Magazine* (t. 6143) should be set aside for that of *Blumenbachia chuquitensis*, a species which differs materially in habit.—T. MOORE.

SHOW AURICULAS, AND HOW THEY ARE SHOWN?

HERE is no doubt but that North and South alike are witnessing an Auricula revival, for the Auricula is surely rising in the estimation of the lovers of flowers. "That beautiful and fascinating flower," as old Thomas Hogg once termed his pet Auricula, is getting very much into demand; and not only are the trade cultivators of the Auricula deluged with orders which they are unable to execute, but every private grower is also besieged with requests for a few plants; in some cases from cultivators, in others from those who are desirous of forming a small collection. Some grand old sorts are very difficult to procure, and they appear to become scarcer year by year. Some of the flowers raised a half and three-quarters of a century ago are still much esteemed.

The Annual Exhibition of the National Auricula Society was held at Manchester, on April 27, and proved a decided success, as exhibitors and good flowers were both numerous. Manchester is now the home and centre of Northern floriculture; Yorkshire and Lancashire alike contribute their quota of cultivators, "counties"—to quote the words of the premier Auricula-cultivator of the North, the Rev. F. D. Horner, of Kirkby-Malzeard, Ripon—"counties which may be called the equatorial regions of Auricula-growing, and indeed the torrid zone of fervour and enthusiasm about them." The names of the premier six Auriculas, exhibited by the Rev. F. D. Horner at the above show, are worth giving, as they were almost perfect examples of cultivation:—*White-edged*—Regulator and Heaps' Smiling Beauty; *Grey-edged*—Headly's George Lightbody and Sykes' Complete; *Green-edged*—Traill's Prince of Greens; *Self*—Campbell's Pizarro.

The leading Northern flowers of the Green-edged section were:—Prince of Greens, Alderman Wisbey (Headly), Imperator (Litton), General Bolivar (Smith), Prince of Wales (Ashton), and Colonel Taylor (Leigh); of the Grey-edged section—George Lightbody, Complete, Robert Traill (Lightbody), Colonel

Champneys (Turner), Conqueror of Europe (Waterhouse), Alderman Charles Brown (Headly), and two fine new Northern flowers, Alexander Meiklejohn (Kay) and George Levick (Walker). The Rev. F. D. Horner grows quite enthusiastic in his summary of the qualities of the former flower:—"Nothing surpasses it as I have bloomed it; it is new, and if true to its promises, it is indeed a gem. It is most like George Lightbody and Conqueror of Europe combined in one grand flower. There is the dash and nearly the size of the Conqueror without its coarseness, and the fine form and substance of George Lightbody without its frequent want of life in the body-colour and of decision in the broad edge. The plant takes after Conqueror,—healthy, but not large; foliage long, narrow, thick, much varied, and roughly serrated, green, and more abundant than in Conqueror." "Walker's George Levick is a rich silvery-grey, full of life and brilliancy throughout the flower, which will rival George Lightbody." Such high praise comes from one of the most accomplished and discriminating Auricula-cultivators of the day. White-edged flowers had as their leading representatives, Regulator (Pott), Smiling Beauty (Heap), Smith's Ann Smith, Cygnet, Taylor's Glory, Catharina (Summerscales), and Omega (Turner). "But as with the noble Green-edges, so with the gentle Whites, the truly great are few." By general consent among the leading Northern growers, Smiling Beauty is placed at the head of the flowers in the White section; and next comes Taylor's Glory, Smith's Ne Plus Ultra, Ann Smith, and Lightbody's Countess of Dunmore. Self-flowers were remarkably well done. At the head of them must be placed Pohlman's Ellen Lancaster, an intensely dark flower, of fine outline, and rich dark petal; paste not quite circular, but yet very fine. Charles J. Perry (Turner), a lovely blue, the best of them all in breadth, roundness and flatness of petal, and richness of colour, which is a very desirable one; in the eyes of the Northern connoisseurs of the Auricula, the tube is considered to be too pale, but that appears to be a weak point among the blue-edged Self-flowers. The Lancashire men term all the Selves "Edged Self," as the Rev. Mr. Horner states, "Not inaptly, for the breadth, which in other classes is a belt of green, grey, or white, is in the Selves occupied by the body-colour extending, without change of shade, to the petal-edges. Hence the importance in this class of a bright-yellow tube and brilliant broad paste, without which the flower has a heavy sleepy look. Selves are not only a lovely class in themselves, but their effect among the others at blooming-time is very grateful; their quiet colours afford a rest to the eye that is confused by the rich rivalry of unrelieved masses of emerald-greens, and pearly greys, and frosted whites." But I must hasten to complete my list of Selves, and so I go on to instance Netherwood's Othello, very dark; Campbell's Pizarro, deep brown; Martin's Mrs. Sturrock, and Campbell's Lord of-Lorne, a very showy, bright, deep-red, or crimson Self, of good quality.

The Southern growers show their Auriculas with the stems of the trusses tied securely to sticks, but in the North it is always a regulation that the trusses are to be shown free from all artificial packing and support. The Northern cultivators

hold strong opinions on that point, asserting that no Auricula exhibited at the National Exhibition ought to need props and crutches to support it. Mr. Horner stated to me that not a flowering-stem of any of his sorts needed tying-up, either at home or when shown, and the only florists' sorts which have a tendency to lean over in the stem are Emperor, Blackbird, and Moore's Violet. Vigour appears to be a characteristic of Northern culture—a development that will secure a straight stiff stem is arrived at, and they infer, whether justly or unjustly, that plants that need supports have either been badly grown, by not being allowed air enough (and there the exhibitor deserves to suffer), or they are sorts with leggy stems, which is a fault in any variety. A good Auricula should be the model of elegance.

In the North there must be absolute quality in the flowers to entitle them to precedence on the exhibition-table. There must be the round flat pip, the clear pure golden tube or throat; the body-colour bright, dense, and regular, marked as a zone, and not breaking away into the edge, with flashes here and there like summer lightning; the segments beaded on the rim with meal that ought not to trespass across the edge; with a pure paste confined to the limits of the ground-colour. A large pip finds no favour merely because it is large; a small one, insignificant at first sight, but sure to be exquisitely perfect in the possession of points of quality, is crowned with glory and honour.

Not less than five expanded pips are required in all classes for pans, *i.e.*, where two and more flowers are exhibited; and in all the premier classes, where only single plants are exhibited, there must not be less than three expanded pips. Disbudding and thinning-out are applied more or less to all flowers intended for the exhibition-table, so the Auricula need be no exception. In the South, we have become familiar with large and sensational trusses, especially in newer varieties, like Colonel Champneys and Charles J. Perry, and mere weight has had a certain influence. The Northern grower asserts that trusses may be shown with far too much stuff left in them, and that a redundancy of pips only adds useless weight, and without it, the truss properly adjusted would have looked no smaller, and been far neater, every good pip showing its properties to the eye at once. On reflection, there appears to be much force in this, for a large truss gets a huddled appearance, many of the pips are much cupped, owing to such a number being crowded into a small space, and the aspect is uncouth and inelegant to the cultivated eye and taste of a good grower. The distinctness and neatness of each pip go farther than mere bulkiness, besides which, a full head of pips is never of equal size and properties.—R. DEAN, *Ealing*.

LATE-KEEPING APPLES.

THE summer and autumn of 1874 were so dry and warm, that they had the effect of ripening the late varieties of dessert and kitchen Apples better than has been the case for many years past. The soil in the kitchen garden here is of a very adhesive nature, with a red clay sub-soil, so that

in wet cold summers and autumns Apples never ripen properly so as to keep well. I have in the fruit-room at the present time (April) the following varieties of dessert Apples, all good-sized specimens and nicely coloured, namely :—*Court-Pendu-Plat*, *Old Nonpareil*, *Fearn's Pippin*, *Golden Harvey*, *Keddleston Pippin*, a delicious little apple; *Lamb Abbey Pearmain*, one of the very latest keepers; *Reinette van Mons* and *Reinette du Canada*, both very large and good late dessert kinds; and *Sturmer Pippin*, which is one of the most valuable late apples that can be planted, both for flavour and for being a sure bearer. The *Calville Blanche*, from small horizontal cordons planted on the bottom of an east wall, is another most delicious apple here, and keeps well; it is likewise one of the very best to be eaten by invalids, as it melts in the mouth without much mastication.

Of kitchen Apples, the kinds which are in the best condition here, in the same fruit-room with the above, are the following, namely :—The *Alfriston*, a valuable large apple, and the tree a great bearer; this sort and the *French Crab* can be kept in a good fruit-room for two years without the fruit shrivelling much; the *Brabant Bellefleur*, another large and good-keeping kind; and *Dumelow's Seedling*, or *Wellington*, an excellent sauce apple, with a brisk acid flavour. The *Bess Pool* is a fine-coloured sort and late keeper, but the tree is only a shy bearer. The *Bedfordshire Foundling* and *Rymer* are both excellent late keepers; and *Allen's Everlasting* is the latest keeper of all, and is like the *Sturmer Pippin* in shape and flavour.

In the above list of late dessert and kitchen Apples, I believe there will be found as good a selection as can be planted, where very late-keeping varieties are desired. In planting new orchards, too many of the early and mid-season sorts of Apples are in general planted, and there is produced a glut of fruit that will not keep, and which is not nearly so valuable for use or for the market, as the late-keeping kinds.—WILLIAM TILLERY, *Welbeck*.

THE NARCISSUS.*

THIS is one of a series of illustrated monographs of popular garden flowers, which will be welcomed by every one taking interest in ornamental gardening. The Narcissi have within the last few years excited much interest amongst cultivators, and the appearance, therefore, of this work just at their blooming season was very opportune. Mr. Baker's synopsis of the species may be said to form the groundwork of the text, to which in a separate chapter the author has added a variety of less technical information. He has also gone into the history, the poetry, the culture and propagation, and the diseases of these plants, for which purpose he has apparently diligently sought for materials wherever they could be found, the result being a very readable account of one of our most beautiful early spring flowers.

* *The Narcissus: its History and Culture, with Coloured Plates and Descriptions of all Known Species and Principal Varieties.* By F. W. Burbidge. To which is added, a scientific review of the entire genus, by J. G. Baker, F.L.S. London: Reeve and Co.

The chief interest and value of the book as a garden monograph depends, however, on the 48 plates from the author's pencil with which it is adorned, and which serve to represent all the species, and the principal known varieties of the genus. Though somewhat wanting in artistic finish, the drawings are, on the whole, sufficiently accurate to give a very good notion of the plants intended to be represented; and it will be most useful to all those who in future take up the study or culture of our garden *Narcissi*, to have such a complete series of illustrations thus collected together for ready reference. Indeed, the book should find its way into the hands of all who delight in hardy flowers, and especially of those who take interest in this particular family. We hope to see it speedily followed by similar monographs of other popular flowers, and for which the publishers should find an ever increasing demand.—T. MOORE.

HOW TO GROW PORTULACAS:

PORTULACAS are popular and well-known annuals, yet we do not commonly meet with them in situations which suit them, and which should be fully open to the direct rays of the sun. In such positions they display their glittering hues to great advantage. There is a peculiarity attached to their successful growth and blooming, and if this is not met, all the mistaken and erroneous, though well meaning, cultural coaxing possible will fail to draw out their good qualities. There exists a belief, and it is one grounded on many personal trials and attendant failures, that *Portulacas* will not transplant, or at least, that no real success can be attained with transplanted plants. That this is not the case, I distinctly aver; and more, I affirm that with a properly-prepared soil, and a properly chosen site, they will succeed most thoroughly. In fact, much of the success which is realised in their culture is mainly due to these two important considerations.

The situation in which alone these plants will succeed is that whereon the sun shines with uninterrupted clearness during the whole or the major portion of the day, especially of that portion of it which comes between the hours of 8 a.m. and 6 p.m. So much does success depend upon the sun's influences—indeed, the sun seems to be their very life—that where buildings, or walls, or even trees, or a hill-slope exists on their northern side, so as to increase the heat or radiation, their vigour and the redundancy of their blossoms will be increased in an equal ratio.

The soil should be at once very light, open, and porous, and very rich; or it may consist of sandy loam, road-scrappings, shingle, or small stone siftings, and rich, thoroughly-decomposed manure of any kind. The deeper this can be prepared the better, and if elevated slightly ridge-fashion, so much the more will the plants flourish therein. Herein the seeds may be sown in very shallow drills, or according to the width of the space, broadcast, and they will succeed thoroughly.

To prepare plants for transplanting, the seeds need to be sown in pans or boxes, not too thickly, and so that they may attain to a robust condition before

transplanting, or, if possible, potting-off. They should not be sown before the second week in April. In transplanting them press the soil firmly around each plant, and give a thorough root-watering. This is all that will be necessary for them. In such a position, they appear to gain strength from the very heat of the sun, and in such a soil to flourish greatly. Any warm, sunny site possessing deep, rich soil, such as an out-doors vinery-border, may be made to give an annual display, if after one season's bloom the seeds are permitted to sow themselves, as they will come up annually each spring with great vigour, as self-sown seeds generally do. It is scarcely necessary to observe, however, that the border should not be dug or forked over in the interim, at least not deeply, if self-sown plants are looked for.—WILLIAM EARLEY, *Valentines*.

GARDEN GOSSIP.

IF the *Exhibition of Clematis*, which has been kept up by Messrs G. Jackman and Son, of Woking, during the greater portion of the past month, in the garden of the Royal Botanic Society, there can be but one opinion—it has been altogether novel in character, and it has been of surpassing excellence.

The show, consisting of from 350 to 400 plants, some bearing from 100 to 150 flowers each, was made in the glass corridor leading to the conservatory, which was filled from end to end. The larger plants were trained on balloon-shaped wire trellises, of about 2½ ft. in height and width; and the effect of such a multitude of the large star-shaped blossoms was most charming. Amongst the newer varieties of the patens type the following were conspicuous:—Fair Rosamond, blush-white, with an indistinct red bar, and prominent rosette of stamens—a fine flower, with the additional attraction of being delicately scented; Mrs. S. C. Baker, French-white, with claret bar, fine; the Queen, pale lavender, or mauve-lilac, and primrose-scented, very fine; Stella, deep mauve, with well-defined reddish plum-coloured bar; Miss Crawshay, delicate rosy-pink, a novelty as regards colour, and a free grower; Lord Derby, pale lavender or bluish-mauve, a very free-blooming and showy variety; Lord Mayo, deep rosy-lilac, darker towards the base, and especially down the bar, sweet-scented, and very fine; Countess of Lovelace, double, with bluish-lilac guard sepals, and a rosette-like deep lilac centre, in the style of John Gould Veitch, but a much superior flower, and a more vigorous grower; Vesta, dead-white, with a creamy tint over the central bar, form very fine, one of the best whites yet raised; Ada, lavender-blue, with mauve edges, flowers very freely produced; Sir Garnet Wolseley, rich plum-colour, with a shaded red bar, distinct, and a very free bloomer; Mrs. George Jackman, a splendid white, larger than Vesta; Prince Alfred of Edinburgh, a delicate mauve, with paler, almost white bar; and Early Purple, a reddish-purple or plum-colour, passing to deep purple, and like Sir Garnet Wolseley, very useful as a dark-coloured early bloomer. Of the florida type Lucy Lemoine proves to be a very great improvement on Fortunei. Of the lanuginosa type the following were the new varieties:—Princess of Wales, deep bluish-mauve, a very free grower and flowerer, and remarkable for the depth of its colour, and the breadth and refinement of its reflexing sepals; Robert Hanbury, mauve-lilac, shaded red up the bars, a very fine smooth flower of good substance; Morikati Oké, bluish-lilac, with a well-marked deeper-coloured margin, pretty, and very free; Angelina, bluish-lilac, with edges of a deeper colour, very fine, and free-blooming; Mrs. Hope, large, satiny-mauve, very full and reflexed; Alba Magna, a superb white, with the sepals nearly 3 in. broad; Duchess of Teck, another grand white, of very fine quality and distinct in form; Blue Gem, a delicate satiny-mauve. Of the Jackmanni type the most prominent were—Lady Stratford de Redcliffe, of a peculiar tint of lilac flushed with red; and W. E. Essington, of a reddish-violet hue, deeper towards the base, a great acquisition, since, though belonging to the summer and autumn-blooming sections, it comes into flower naturally with those of the patens type. The varieties of the Jackmanni and of the Viticella type do not bear forcing, and consequently were not exhibited in their true character.

— **M**R. WILLIAM PAUL's annual display of *Pot Roses*, &c., was held in the large Rhododendron tent in the Royal Botanic Society's Garden, during the

first week of May. The plants were very fine, but were dwarfed to an appreciable extent by the height of the structure, and by the large space over which they were distributed. It had been intended to meet this by planting, in the more conspicuous points of view, suitable clumps of pictorial trees, such as the variegated *Acer Negundo*, the golden and silver-leaved Elder, the Purple Nut, the Sea Buckthorn, &c.; but from the lateness of the season, the trees refused to clothe themselves with foliage, in aid of the blossoms of the Roses. These latter left nothing to be desired, being there in hundreds, old and new, large and small, all superbly flowered. The new Star of Waltham was shown very fine, as also were Princess Christian, Princess Beatrice, and Peach-Blossom. Madame Hippolyte Jamin, Captain Christy, Marquis de Castellane, Madame Lacharme, Catherine Mermet, and Marie Van Houtte, were also very attractive.

— THE *National Auricula Society* held its annual Exhibition on April 27, in the Town Hall, Manchester, in connection with one of the meetings of the Manchester Botanical and Horticultural Society, and appears to have had a fairly successful gathering. The exhibition was *de rigueur*; the trusses having to be shown free from all artificial packing and support; and all plants in the "pans," i.e., collections not being eligible with less than five expanded pips. The leading prizes were won by the Rev. F. D. Hornor, Kirkby Malzeard, Ripon; Mr. C. Royds, Rochdale; Mr. R. Lord, Todmorden; and Mr. C. Turnor, Slough.

— THE annual Whitsun *Exhibition of the Manchester Botanical and Horticultural Society*, which opened on May 14, was probably, as a display of practical horticulture, equal to any of its predecessors. The glass pavilion formed an exhibition in itself, so thoroughly good were the stove and greenhouse plants, of which a grand lot came from Messrs. E. Cole and Sons, of Withington, Mr. Cyphor, of Cheltenham, and Mr. B. S. Williams, of Holloway; while the orchids, though not so well represented as on former occasions, were still exceedingly fine; and the ferns, hardy and exotic, called for special admiration. A specimen of *Gleichenia Speluncæ*, 6 ft. high, and from 7 ft. to 8 ft. through, grandly furnished, from T. M. Shuttleworth, Esq., of Preston, was a noble specimen indeed. Such Roses as those shown by Mr. Turnor and Mr. G. Paul had never before been seen at Manchester. Now and rare plants came from Mr. Wills, of Old Brompton, and Mr. Williams, of Holloway; and among other striking features of the exhibition was a charming group of *Clematis*, from Messrs. G. Jackman and Son.

— SOME of the most beautiful of recent acquisitions occur in the genus *Bertolonia*, of which M. Louis Van Houtte has been successful in raising three hybrid varieties of the most superb character. They are plants with short erect stems, bearing large opposite ribbed leaves, beautifully striped and spotted. *B. Van Houttei* has these ample leaves of a rich olive velvet ground-colour, traversed lengthwise by distinct bars of beautiful magenta, and dotted all over with hundreds of spots of the same colour. *B. Mirandæi* is similar to the foregoing, only the leaves are not marked with bars, but are uniformly dotted with crowds of magenta spots on a dark olive velvet surface. *B. Marchandii* has dark velvet green leaves, striped with silver bars, which constitutes it a very pleasing contrast to the other sorts. The *Bertolonias*, including one of Mr. Bull's, called *B. superbissima*, are remarkable for the brilliancy of their magenta-coloured markings, which gives the appearance of the leaves being sprinkled over with gems that emit a brilliant purple light.

— MR. E. MAYER, of Carlsruhe, has lately published the results of a series of experiments in *Raising Ferns from Spores*, more particularly the *Gleicheniaceæ*, *Marattiaceæ*, and *Hymenophyllaceæ*. One species of *Gleichenia*, *G. dicarpa*, he has raised in large numbers. From the first development of the prothallium until the appearance of the first frond exactly five months were consumed; the dark green prothallium is nearly circular, about half an inch in diameter, and remarkable for its peculiar root-hairs, which are short, thick, bristly, of equal length, and of a lustrous metallic-brown colour. The spores of the *Gleicheniaceæ* observed were of a sulphur-yellow. Among the *Marattiaceæ*, also, only one representative, *Marattia latifolia*, was raised from spores; from the day of sowing until the appearance of the prothallium a month elapsed, and another month passed before the plantlets were sufficiently large to be pricked out; the first frond did not show itself for a period of six to eight months, or even longer. The prothallium in

this Marattia is very large, and an experiment was tried to propagate some of them by cutting up. On each portion one of the deep sinuses was left, as the first fronds are usually produced in or near one of them. The experiment was perfectly successful, nearly all the pieces producing fronds in a much shorter time than those imported. Every attempt to raise any of the Hymenophyllaceæ from spores proved fruitless, even although the spores were sown directly. The first stage of germination or vegetation of the spores of this group of Ferns takes place in the spore-cases before they are detached from the plant, and the shortest interruption in the vegetative process seems to be fatal to the vitality of the spore.

— THERE seems to be some uncertainty as to whether the *Spiræa palmata*, of Thunberg, was known in this country as a garden plant previous to its introduction, a few years since, by Mr. Fortune. It is quoted in Loudon's *Encyclopædia* and *Hortus Britannicus* as introduced from China in 1823, consequently, something under the name of palmata was then grown. Was it the true *S. palmata* or not? Probably not. Three plants have borne this name of *Spiræa palmata*:—(1), The Japanese plant, to which alone it belongs; (2), a North-American plant, with rose-coloured flowers, the *Spiræa palmata* of Linnæus, and which is properly the *S. lobata* of Murray; (3), the plant figured by Pallas in his *Flora Rossica*, which is properly the *S. digitata* of Willdenow, a plant of Eastern Siberia, probably extending to China also. The true plant, then, being Japanese and not Chinese, it seems most probable that the species formerly grown in this country was the latter, *S. digitata*.

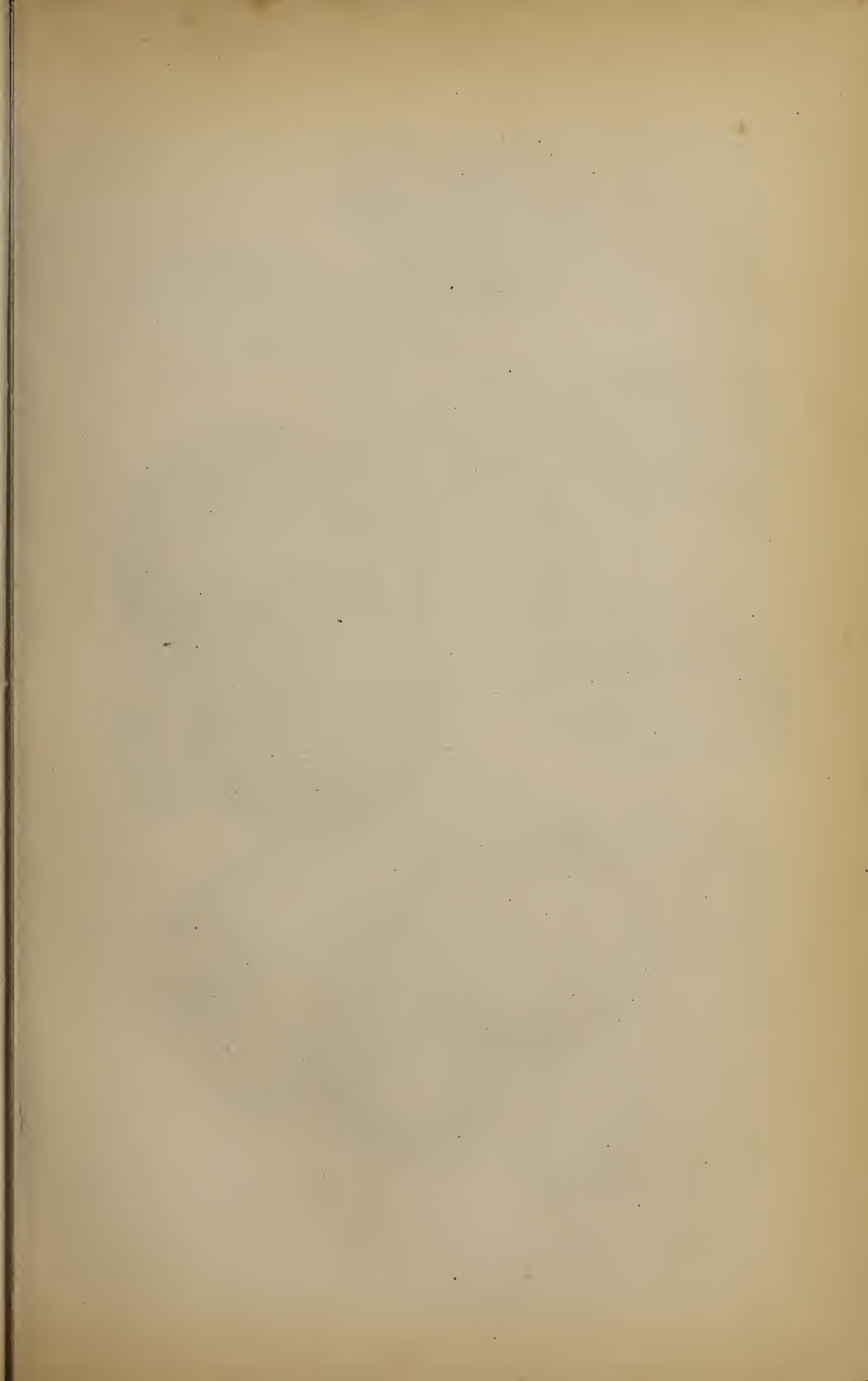
— SOME beautiful *Double-flowered Cherries*, &c., are mentioned by Mr. Gumbleton as growing in his garden at Queenstown; amongst them *Cerasus caproniana ranunculiflora*, a tolerably free-flowering shrub, which produces large double pure white flowers, and is perhaps the finest double Cherry known; *Cerasus Watererii*, which is white, edged with pale rose-colour; and *Cerasus Sieboldii roseo-pleno*, which produces large blush-coloured semi-double flowers in abundance. An interesting Japanese shrub is that described and figured in Siebold and Zuccarini's *Flora Japonica*, under the name of *Prunus tomentosa*; it is valuable, not so much for the beauty of its blossoms, which, though profusely produced, are of a dull blush-colour and insignificant in size, as for its beautifully bright scarlet fruit, which resemble a large shining haw, but have a white spot on the side.

— IT appears that a new *Cooling Apparatus for Liquids*, such as water, wine, milk, &c., and which is claimed to be most efficient and convenient, and at the same time among the cheapest, has been recently patented at Vienna. It is described as consisting simply of a tube, most conveniently made of tin, with a tight-fitting cover. This tube is rapidly packed, by aid of a wooden stamper, with pounded ice and salt, either mixed or in alternate layers, and when thus charged is plunged into the liquid that is to be kept cool.

— IN the *Country Gentlemen's Reference Catalogue to the Best Modern Works*, issued by Horne and Co., of the Edgware Road, we have a very useful guide to the selection of books likely to interest country residents. It is, in fact, a classified list of standard and current publications, arranged under such headings as Agriculture, Aquarium, Birds, Bees, Botany, Brewing, Cookery, Dogs, Ferns, Game, Gardening, Fishing, Horses, Natural History, Poultry, &c., the title and price being given, and in many cases a short description or critique being added.

— AMONGST ornamental hardy plants suitable for gentle forcing, the *Polygonatum multiflorum*, or Solomon's Seal, is very striking. The best mode of treating it for this purpose is to plant out the clumps for two years in a good, rich, light soil, forcing them the third year. The clumps then throw up splendid spikes of flowers.

— IN the remarks on *Double or Fasciated Hyacinth-spikes*, at p. 118, the word printed *effects* should read *offsets*,—"the first stage towards a natural division into offsets."





W.H. Fitch del.

Chromo G. Severeijns Brussels.

Sultan Plum.

THE SULTAN PLUM.

WITH AN ILLUSTRATION.

WE owe our thanks to Messrs. Rivers and Son, of Sawbridgeworth, for the specimen represented in the accompanying Plate of this fine new Plum, which is a seedling raised by them in 1871. Dr. Hogg, in the new edition of his *Fruit Manual*, describes it as “a culinary plum of great excellence; ripe in the middle of August.” Our specimens were received near the end of August in last year, and were then in a nicely ripened condition. The variety is considered to bear some degree of resemblance to the Orleans Plum, but it is said to be a most profuse bearer, and much earlier than that variety; and it differs further in having the bark of the young shoots smooth.

The following is Dr. Hogg’s description:—“Fruit above medium size, round, marked with a deep suture. Skin dark purple, covered with a thick blue bloom. Stalk about half-an-inch long, inserted in a wide hollow. Flesh greenish-yellow, adhering to the stone, firm, brisk, and sweet, with a pleasant flavour.” Our own notes of the fruits submitted to us run thus:—Fruit round, about middle size, with a rather shallow suture. Skin pucey-purple or dark purplish-red, dotted with minute brown specks, and covered with a thin bluish bloom. Stalk set in a deepish cavity. Flesh deep greenish-yellow, separating tolerably freely from the stone, juicy, and with a pleasant flavour, similar to that of the Orleans Plum.

It is a handsome and useful Plum, and one which, being of prolific habit, is likely to become a favourite with fruit-growers.—T. MOORE.

PRESERVING GRAPES AFTER THEY ARE CUT.

THIS subject has very deservedly occupied the attention of a good many writers in the columns of the horticultural press of late years, the majority giving the preference to the system of keeping them attached to the lateral on which they grew, placing its end in a bottle of water. In this way, they have undoubtedly kept their Grapes plump and sound till April, or even till May. Perhaps the finest examples of this sort ever seen in public, were the splendid bunches of Black Alicant exhibited at the April show of the Royal Caledonian Society, in Edinburgh, recently, by Mr. Douglas’s gardener, from the neighbourhood of Dalkeith; they were perfect as far as appearances went. Others who have made their success known through the press, were no doubt equally successful. In the face of all this, however, I doubt if grapes so kept are wholesome. They are kept plump by a certain portion of water entering the berries. There, in an undigested state, it mixes with the sugar in the grapes, and unless they are kept in a temperature little above freezing, less or more fermentation takes place, rendering the fruit anything but suitable for the stomach of an invalid, to say the least of it. I was first struck with this in the year 1848. Previous to that date, I had been in the habit of cutting a good many fine Muscat Grapes, with the lateral they grew upon, both ends of which I

cut clean across, and sealed the ends with sealing-wax. In the year named, however, I thought I saw my way to keeping them plumper by placing one end of the wood in bottles of water, still sealing the other end. I treated about half the number of bunches I kept in this way; they certainly retained their plumpness more satisfactorily than those not placed in water, and I kept them till the others were done. On sending the first dish of those thus treated to my employer's table in March, they were admired, but next day I was sent for, and asked why those fine-looking grapes were inferior in flavour to the less plump ones. I explained what I thought must be the reason, namely, that they had been kept two months, with the ends of the laterals they grew on, in water. My employer's reply was, "Then I prefer them a little shrivelled, with their natural flavour undiminished." I afterwards reverted to my old way of keeping them, except that I tried a few bunches with the ends of the wood run into mangold-wurzel, with not much appreciable advantage over the method of sealing the ends of the wood. I, however, find from my journals that in March, towards its close, I supplied good fresh Muscats by just hanging them in a dry cool fruit-room; for, be it remarked, we had no Alicants, Lady Downe's, or any of the race of what were known as late-keeping grapes in those days. The Muscat and West's St. Peter's were our latest keepers then.

What I have said as to the evil of keeping Grapes in water, applies with double force to the same system as applied to Pines. When the stem of a pine is placed in water, the action of the crown sucks up a quantity of it into the fruit, where, if it is in a warm climate, decomposition sets in at once, and the fruit must become very unwholesome. This is the reason why so many of those otherwise fine pines brought from St. Michael's, with their stems in earthenware fountains of water, to keep them plump on the voyage, so soon decay when placed in the fruiterer's shop, and are so often, when cut, found to be black at the heart. I saw a whole row of them in this state in the window of one of the principal fruit-shops in Princes Street, Edinburgh, this spring. Another fruiterer in the same street told me that she would never have another St. Michael's Pine in her shop, as she had had several returned that were found to be black inside when cut. When black, there is of course little danger of their doing injury, as no one will eat them in that state; the danger is before the action of decomposition becomes evident to the eye. It would be far safer for those who consume these pines if they were brought over sea in dry cases, without water; they might not arrive so fresh-looking, nor prove so heavy, but they would be wholesome, which they cannot be as at present imported.—W. THOMSON, *Tweed Vineyard*.

LAGERSTRÖMIA INDICA.

LAST September I sent you an account of the gorgeous flowering of *Lagerströmia indica* here, which flowering was brought about by the turning of the plant out of a pot into a large brick box at the end of a plant stove. After the plant had done flowering, it was closely cut back, and it remained

in a nude state until early spring, when it broke freely, and is still growing luxuriantly. It has thrown out about twenty shoots from three to four feet long, each of these having from four to fourteen laterals. The ends of all these shoots are now showing flower, and we are looking forward to another treat such as we had last year.

I am led to make this communication from the suddenness of the flowering of the plant last year, after having been planted out; and also to show that the plant in its new quarters continues to comport itself by an exhibition of health, vigour, and inflorescence excessively pleasing to look at. The plant will be in full flower by the end of June or the first week in July.—WM. MILLER, *Combe Abbey Gardens*.

HARDINESS OF CLIANTHUS MAGNIFICUS.

WE have a plant of the above that was turned out of a pot last summer against a trellis with south aspect, and in a sheltered position. It was one out of a number raised from seeds three years ago, and through not having room for all under glass, it was planted out. Not expecting it to stand the winter so far North, no covering was given until after it had withstood 21° of frost. A goodly portion of its foliage remained as green and fresh as it was in the autumn, when it is likely to produce its fine racemes of flowers. This is a much finer variety than *Clianthus puniceus*, which it resembles, but it is much more robust than that sort, having larger flowers, and fine glossy dark green foliage. It may therefore be recommended as being well adapted for growing against pillars, either in a conservatory or greenhouse, or on a covered wall.—J WEBSTER, *Gordon Castle*.

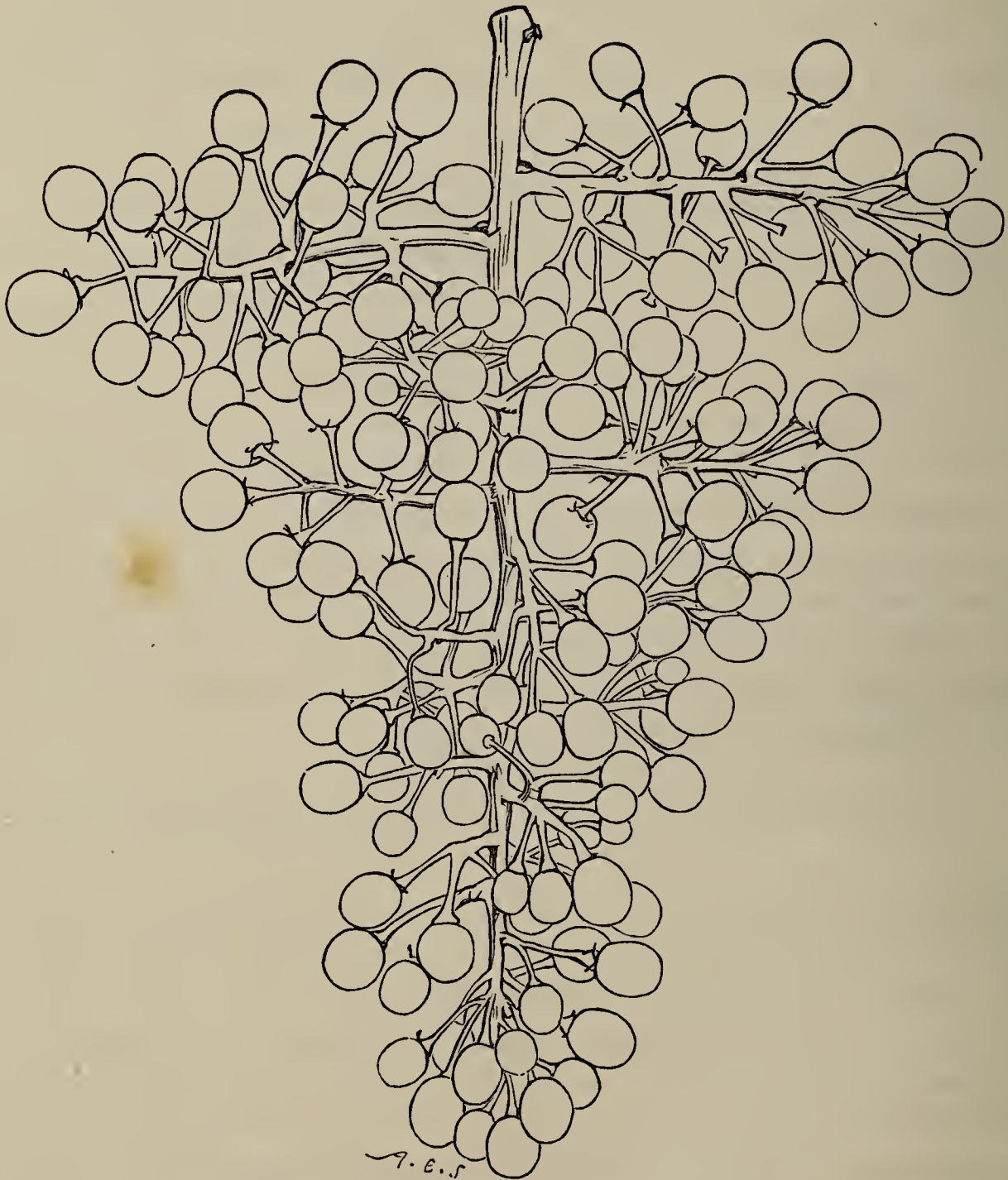
VINES AND VINE-CULTURE.—CHAPTER VIII.

THINNING THE FRUIT.

THIS is an operation of considerable importance, not only for the well-being of the crop of fruit, but also for the after or lasting well-being of the plant itself. The Grape Vine is extremely fruitful, so much so, that were the whole crop of the bunches produced by it allowed to remain, the plant would soon succumb through over-fertility. It is easily possible to overcrop a Vine, and where such has been the case, it takes years for the plant to regain its former strength. It is quite impossible to form any estimate, or to say how many bunches or what crop a Vine should carry, so much depends upon the health and constitution of the plant itself, on its surroundings, and on the subsequent management, &c. The rule to follow is this: according to the surface of properly developed leaves, &c., so should be the crop of fruit taken. We know we must have so many good leaves for every pound of fruit, and the greater the amount of properly developed foliage allowed the better. If we bear in mind that all the colouring and sweetening matter which goes to the perfecting of the berries has first to pass through and be elaborated by the leaves, it will be seen

that without a certain amount of good leaves, good fruit cannot be produced. A Vine with weak sickly foliage cannot produce or bear much fruit, and a Vine whose foliage gets destroyed by red-spider, &c., is in exactly the same condition.

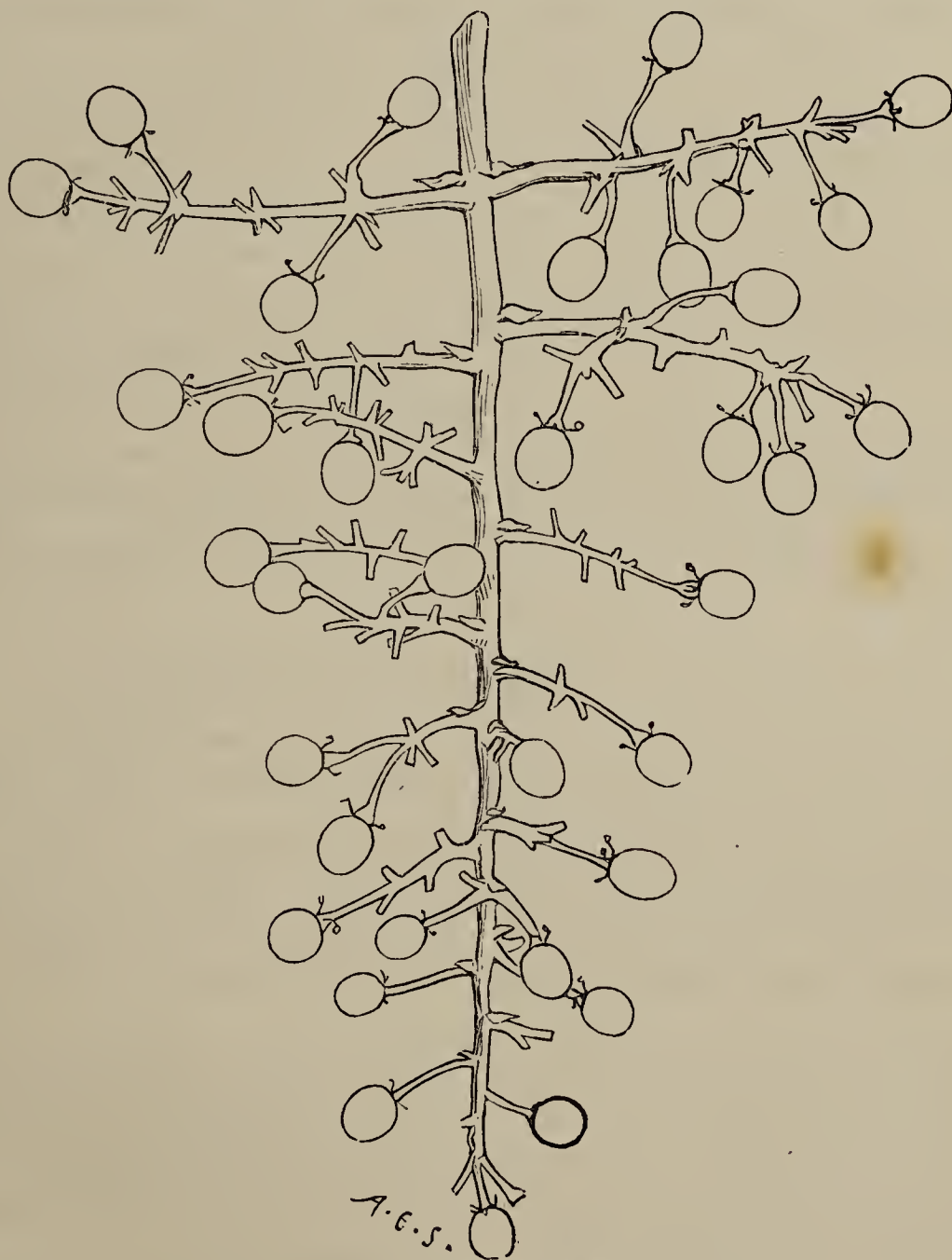
As a general rule, one bunch on each spur would be considered a heavy crop: it is never advisable to leave more. If one-third of these bunches were taken off, the bunches being of moderate size, what is left would be termed a moderate crop; and so on. In thinning the bunches of such free-setting varieties as the



SMALL CLUSTER OF GRAPES BEFORE THINNING.

Black Hamburgh, every second bunch on each spur should be cut off before the flowers open, and all others which it is desirable to remove as soon as the grapes are set. The thinning of the bunches as well as of the berries should take place as early as possible. It is a great waste of power to allow that to develop itself which is not required, and which it is known must be cut off. Therefore, as soon as the berries are fairly set, thin out—that is, cut off the supernumerary bunches at once, and commence the thinning of the berries.

The thinning of the berries, or Grape-thinning, as it is popularly called, is a delicate and somewhat tedious operation. To be expert at this work requires not only considerable practice, but a quick eye to see where and what to cut, and a nimble yet steady hand, so that the berries retained are not injured. The figures here given represent, (1) a small bunch of Black Hamburgh unthinned, and (2) one of similar size after being properly thinned. In the former there were 132 berries, and in the second there were, before any were cut out, in all 124 berries, but these have been reduced by the scissors to 36—about one-third.



SMALL CLUSTER OF GRAPES AFTER THINNING.

This may be taken as a fair average of the thinning required for ordinarily well-set Black Hamburgh Grapes. Of course, the number retained should vary according to the size of the berries of the sort; such as the Royal Muscadine do not require to be so severely treated. It seems to the uninitiated a great sacrifice to cut away so many, the thinned bunch appearing quite a skeleton; but when it is remembered that each berry, when fully grown, should be nearly one inch in diameter (oftentimes more), it is plain that to leave more than there is actual space for, is absurd as well as injurious.

The mechanical operation of thinning Grapes is thus performed :—Procure a little cleft or forked stick about six inches long to use with the left hand, in order to hold the bunch firmly without touching it, and take a pair of grape-scissors in the right hand. Trim the bunch if required into proper shape first, then continue by cutting out all the inside berries, next all the small berries, and then the side berries. The expert hand will cut these off two or three or more at a time, not singly, as the hesitating, unpractised hand will do. This, it will be found, will have materially lessened the work, and all that will remain to be done is to go on, and regulate the remainder to the required distance apart.

The time that is occupied in thinning grapes is very great, but it must be given to the operation if good grapes are desired. It will take about five minutes for an expert hand to thin properly a 1-lb. bunch. With larger bunches it is frequently desirable to tie the shoulders up, and so spread the bunch out, or loop them up to the trellis with S-shaped pieces of thin wire of the requisite length ; others prop the shoulders up from underneath with little bits of wood ; but for ordinary cultivators none of these aids are required ; the berries as they swell lift one another up, and the clusters thus remain compact. Care should be taken not to make the bunches too thin, as when that is done they are so loose when cut as to spread all over the dish. They should be so thinned, that when ripe and cut they will remain firm, whilst yet every berry has been allowed to freely develop itself.—A. F. BARRON.

THE BEDDING PANSIES AT CHISWICK.

IN the spring months few hardy flowers are more effective as bedding plants than the race of Pansies known as Bedding Pansies. Their colours are generally rich and decided, while the blooming season of the true bedding sorts is continuous for a considerable period. About 90 varieties have been grown this year at Chiswick, whole beds being devoted to many of them. The following have been selected as the cream of the collection :—

DARK PURPLES.

MULBERRY (Dean).—A dwarf compact-growing variety, of spreading and free-flowering habit ; the flowers are dark reddish plum-purple, with very small yellow eye, and they are well displayed. A First-class Certificate awarded by the Floral Committee last year was confirmed on the occasion of a recent (June 9) critical examination of the collection.

LOTHAIR (Dean).—A novel and attractive variety, having a dwarf compact habit of growth ; the flowers are large, deep purple, with small yellow eye, and a broadish bronzy spot just below it on the lower petal ; a distinct and rich-looking flower. Awarded a First-class Certificate.

CLIVEDEN PURPLE.—This variety was not in the collection, but it is noticed here as being considered by growers the finest of its colour—a rich plum-purple.

TYRIAN PRINCE (Dean).—A handsome variety, awarded a First-class Certificate last year, but this year voted a Second-class only ; it is of fine compact, but stout-growing habit ; flowers large, dark velvety mulberry-purple, with small yellow eye.

BLUE OR MAUVE-PURPLES.

BLUE BELL (Dean).—A very showy variety, of compact spreading free-blooming habit; flowers numerous, medium-sized, mauve-purple, with a small yellow eye, pencilled over with dark lines. The individual flowers are inferior, but the effect of the mass of blossoms is good, and it is, moreover, a continuous bloomer. Awarded a First-class Certificate last year, which was now confirmed.

BLUE PERFECTION (Westland).—Of compact, free-blooming habit; flowers medium-sized, of a reddish mauve; a fine effective, self-coloured variety, with a general similarity to the foregoing, but more decidedly self-coloured. A First-class Certificate was awarded.

ALPHA (Dicksons and Co.).—A very compact-growing, vigorous-habited, free-flowering variety; flowers large, blue-purple, with a reddish flush, the eye yellow, with a bilobed dark spot in front; good.

THE TORY (Dicksons and Co.).—A variety of free and vigorous growth, and an abundant and continuous bloomer; flowers large, deep blue-purple, with white eye, and a bilobed mulberry spot in front of it; good. The First-class Certificate already awarded was confirmed.

DR. STUART (Stuart).—Of dwarf, compact habit; flowers mauve-purple, with small yellow eye, surrounded by a narrow dark ring; a neat and pretty flower. Awarded a Second-class Certificate.

YELLOWS.

SOVEREIGN (Dicksons and Co.).—Of close-growing habit, dwarf, free, and prolific of blossoms; flowers moderate in size, bright golden yellow, with a slightly pencilled eye; very effective. Awarded a First-class Certificate.

BEDFONT YELLOW (Dean).—A free-growing, compact-habited sort; flowers large, bright yellow, with a slightly pencilled eye; good. Awarded a First-class Certificate.

DICKSONS' GOLDEN GEM (Dicksons and Co.).—A variety of dwarf, spreading habit, and a free bloomer; flowers large, deep yellow, with deeper eye, over which occur dark pencillings; good. Awarded a First-class Certificate.

WHITES.

WHITE SWAN (Dean).—A fine variety, of close-growing tufted habit; flowers moderate size, pure white, with slight pencilled eye; of good substance, and very chaste-looking; fine. Awarded a First-class Certificate.

DICKSONS' QUEEN (Dicksons and Co.).—A variety of free compact habit, an abundant bloomer, but rather later than others; flowers large, white, with yellow eye and pencilled lines. The First-class Certificate awarded last year was confirmed.

LILY-WHITE TOM THUMB (Dean).—A clumsy name for a very useful variety, of free, compact, spreading habit; flowers white, with yellow eye and dark pencillings; a very fair white, but the flowers occasionally come blotched with blue in hot weather. The First-class Certificate awarded last year was confirmed.

DICKSONS' SNOWFLAKE (Dicksons and Co.).—A moderately vigorous sort, of free-flowering habit; flowers white, with a yellow eye, marked by a few faint lines. This was awarded a Second-class Certificate.

VARIOUS COLOURS.

LILACINA (Dean).—A charming variety, of dwarf compact spreading habit, free-growing, and very distinct; the flowers are of moderate size; the upper petals are of a reddish-lilac, and the lower ones bluish-lilac, with yellow eye; an exceedingly pretty and taking flower. Awarded a First-class Certificate.

QUEEN OF LILACS (Dicksons and Co.).—A variety of free, bold habit, forming close vigorous tufts; the flowers are reddish-lilac, paler at the edge, very freely

produced ; a soft neutral colour, novel and effective for grouping. Awarded a First-class Certificate.

NOVELTY (Cocker and Son).—A showy variety, of free-growing habit, but getting rather tall ; the flowers are reddish or puce-purple, with yellow eye, showy ; a pleasing variety amongst the self-coloured flowers. Awarded a First-class Certificate.

MAGPIE.—An old but still useful variety, of vigorous habit, and of a hardy constitution ; it is striking in appearance, from the strongly-contrasted colouring of its flowers, and an abundant bloomer, but rather tall-growing ; the flowers are blackish-mulberry, with a large wedge-shaped spot of white at the tip of each petal ; the spotting sometimes runs out, when it becomes self-coloured. Awarded a First-class Certificate.

To secure a good bloom of these showy flowers, young plants should always be used, these being planted out in autumn or very early spring, according as the situation and soil may be favourable or otherwise. Where they are apt to die off in winter, early spring planting should be adopted, the plants being wintered in a frame, and the sashes removed on all possible occasions. A top-dressing of light rich soil, administered after the first flush of bloom is over, is very beneficial. —T. MOORE.

COVERING PEACH-BORDERS.

It appears that there is great diversity of opinion regarding the covering of Peach-borders, when the trees are forced early. Some are in favour of employing warm fermenting material (such as manure and leaves), while others object to anything warm, but simply protect the borders from cold rains. From many years' experience, I find that the trees grow healthily, the fruits set freely, and they swell best, when dry litter or fern only is used. I have often observed that when hot material is used, the trees do not ripen so freely, and the flower-buds are weakly. My observations are not confined to Peaches, but include Vines also ; and I am by no means sure that it is the best advice we so often read—namely, that Vine-borders should have a good coating of fermenting material or litter placed over the roots early in the autumn, say about the beginning of October. This is often done with the view of harvesting sun-heat, by which the border is well warmed ; but we often have fine warm weather up to November, so suitable for ripening fruit-trees, while at that time we have the borders thickly covered with materials which entirely keep out sun-heat, and in a great measure the air as well. This state of things appears to be unnatural, and not calculated to be advantageous.

The remarks of Mr. Henderson, of Cole Orton, in a contemporary are suggestive, and teach a lesson that many others have experienced to their cost. It will be remembered that Mr. Henderson refers to covering a vine-border for early work, where the roots were active, and showing themselves close to the surface of the soil. They were carefully covered without disturbing them ; but mark the result, the vines fell two months behind the proper time of ripening the fruit, the roots apparently having kept on growing without driving sap to the vines.

It would be gratifying to many readers of the POMOLOGIST if some of our successful growers of early fruit would give their experience in regard to using warm material over the roots of Vines and Peaches, and the time between starting the house and the ripening of the fruit. With two early Peach-houses under my charge, my experience has this season been much like that of Mr. Henderson with his Vines. An early house which appeared to be in promising condition had a quantity of litter placed over the roots in an outside border last October, and the house was started some time in November, and treated in the usual way. The buds, which at first seemed plump and likely to open well, almost disappeared altogether, and no signs of life were exhibited till the new year, when the flower-buds swelled, opened, and set, without loss from any of them dropping. The foliage came large, and the wood stiff and short-jointed, and it is at present very promising. About six weeks after that house was started, a second one had the roots covered, and the structure was closed; the result was that the second one out-distanced the first by six weeks or more, and in the first week in May ripened a very fine crop. The material over the roots was never warm. It appears to me that the roots of the first started house were active; and when covered after the long dry season, the border being intensely hot, and having been well watered by copious showers of rain, the covering of litter must have made it like a hot-bed: hence the growth of roots minus tops.—M. TEMPLE, *Blenheim*.

GARDEN WORK FOR JULY.

FLOWERS.

FLOWER-GARDENS will now be gay and interesting. The majority of the plants should be thoroughly established, and in order to insure that continuity of blossom which is so desirable, yet somewhat difficult of realisation, owing to the complexity of the subjects employed, it is necessary to exercise vigilance and discrimination, with which, and watchfulness as to watering, &c., much may be accomplished. The mulching of all moisture-loving subjects, as previously directed, will save much labour in watering. The best time for watering exposed plants during hot dry sunny weather is, doubtless, the evening, when the power of the sun has abated. Watering unskilfully performed often does more harm than good. Keep *Calceolarias*, *Verbenas*, *Violas*, and *Clematises* well supplied with water at the root, for unless this is attended to, perfect healthfulness cannot be looked for. *Dahlias* and *Hollyhocks* must from time to time be examined and tied up as they progress in growth, frequently dusting around the stems with soot and lime, to keep off the slugs. If the plants are not already mulched with rotten manure, it should be seen to at once, as no amount of watering will insure the same successful results if this is neglected. Border-plants will require staking, supporting them in as natural a position as possible; the usual method of binding them up like sheaves is to be avoided. *Carnations* and *Picotees* will require shading from bright sunshine when intended for exhibition purposes, and should be freely disbudded if fine flowers are desired, keeping the plants moist at the roots, and layering them as soon as the shoots are of sufficient strength to handle. Finish the propagation of *Pinks*, either by layering or

pipings, without delay. Cut all kinds of hedges, both evergreen and deciduous, using the knife upon laurel, and similar large-leaved subjects.

Roses: These may still be budded, as long as the sap flows freely in the stocks and in the plants from whence the buds are taken, it being of importance that the bark should rise freely. Examine *Roses* that are grown in pots for early blooming, and repot such as are either in small pots, or have the soil in a bad state; otherwise it is not advantageous to disturb healthy plants that are in moderately large pots, further than to surface-dress them, and to replunge them in ashes in a fully exposed position, mulching the surface of the pots with rotten manure, and encouraging the plants to make a strong healthy growth.

Conservatory: Afford every facility to the permanent plants to mature their growth; therefore, although shading will be necessary through the hottest part of the day, it must not be overdone, and no more plants should be crowded into the structure than is requisite for display. *Camellias* which have set their bloom-buds should not be regularly syringed overhead, but once a week or so, in the morning, so as to free the plants from dust, will be beneficial, with a free admission of air. Old-established climbers, such as *Lapagerias*, *Tacsonias*, and the various climbers that are permanently planted out, will require liberal applications of water at the root, so as to keep them healthy; when they are allowed to become dry, they are quickly infested with all kinds of insect pests.

Greenhouse: Many of the hardier sorts of hard-wooded plants, such as *Acacias*, *Genistas*, *Heaths*, *Epacris*, &c., which have made early growth, may now be placed out-of-doors, in a position where they will be slightly shaded from the sun. Give every attention to newly-potted plants which are grown under glass, airing them freely during the early part of the day, and encouraging the growing stock by an abundant supply of atmospheric moisture when the houses are closed during the evening. Soft-wooded plants required for winter-blooming must receive no check, but such as require it should be shifted at once, and induced to ripen their wood early, thorough maturity being the point to attain. *Cinerarias* and *Primulas* will now require potting-on; they must not be allowed to become pot-bound, and they will be found to succeed best in a shady position, screened from bright sunshine, the necessary humidity being secured by sprinkling the sides of the frame, and the material upon which the plants are placed, when they are shut up in the evening; make the final sowings for successional blooming. *Pelargoniums* that have done flowering should be watered but little, and should be exposed out-of-doors to sun and air, in order that the wood may get well ripened before they are cut down—an operation which should not now be delayed longer than to secure that the wood may be sufficiently hardened; at the same time, the necessary stock should be propagated. *Chrysanthemums* should now have a final pinching of the shoots, and be shifted on. Those kinds which have a tendency to bloom early in autumn must at once have their final shift, so as to get them thoroughly established early; they will come in at a time when flowers are scarcest. Amongst the varieties I find best adapted for this purpose may be noted, *James Forsyth*, *White Trevenna*, and *Rose Trevenna*; and *James Salter* amongst the Japanese sorts.

Stove: Young growing stock will require to be shifted, and every attention should be given to stopping and tying-out the plants, so as to insure a well-furnished foundation. Insects will now be troublesome, and must be kept in check. Sponging the leaves of the larger-foliaged kinds with water, in which a little soap has been dissolved, will be requisite and most effectual. Maintain a moist growing atmosphere, by frequently syringing the plants, and thoroughly wetting every available surface within the house.

Ferns and *Palms* will require shading from bright sunshine, and will require an abundance of water, both at the roots and atmospherically, for if this is not attended to, and they are allowed to become dry at the root only for a short time, the foliage quickly assumes a sickly hue, which is most objectionable.—GEO. WESTLAND, *Witley Court*.

FRUITS.

Pines : Shift succession plants as soon as the pots are filled with roots ; in so doing, the old *ball* should not be reduced, but merely the drainage-crocks removed from the bottom. Pot suckers for succession. All plants intended for fruiting early next year should have their final shift at once, if not done at the end of last month. See that the heat in the tan-beds is not too strong, especially when the succession plants are in free growth, and rooting freely, for burning the tips of the young roots will, at this season, cause serious injury, from which they will not soon recover ; air freely from the *back* of the pit ; water twice a week in hot weather ; syringe the plants, and close early in the afternoon. For fruiting plants, see previous directions.

Vines : As soon as the crop is cleared from any of the houses, the vines should be syringed, to keep the foliage in a healthy condition as long as possible ; also water the borders, if they are at all dry. Ripe Grapes require to be kept as cool as possible, by keeping the house well ventilated at all times. In the late houses, where the fruit is swelling, a moist growing heat is requisite ; air freely in hot weather, and make use of a little fire-heat, more especially to muscats, if chilly nights should occur ; stop laterals down to the lower joint, tie in the shoots, and thin the berries and bunches if considered too thick. Keep down red-spider by using the syringe freely in all vineries, with the exception of those where the fruit is colouring or ripe. Push on *Pot Vines* that are intended for fruiting next season ; cut off all lateral shoots close to the main-rod as the wood ripens, and stop the canes as soon as they have attained the desired length ; use liquid manure often, as well as to those in fruit, up to the time of ripening.

Peaches and Nectarines : When the crop is cleared from the early-house, go over the trees, and cut away all shoots that can be spared, selecting those that are required for fruiting next season ; give the trees a good washing with the engine, and if weakly from over-cropping or other causes, a good soaking of liquid manure should be given. On the other hand, if the trees are making vigorous growth, no water at all should be put on the border until their growth is finished. Give air night and day ; the sashes may be removed altogether by the end of the month. In the succession-houses where the fruit is approaching maturity, it should be freely exposed to the sun, by turning aside the leaves, and keeping the shoots thin and tied in. Syringe them till they begin to ripen, after which stage, a warm dry airy atmosphere is best.

Figs : The atmosphere should be dry and airy when the crop of Figs is ripening. As soon as the first crop has been gathered, syringe the trees every day, and encourage the second crop, by giving the borders a thorough soaking, and by keeping a moist, warm temperature up to the time they begin to ripen.

Strawberries in Pots : Towards the end of the month the first lot of plants for *early* forcing should be potted ; drain the pots well ; use free loam, with a mixture of cow-manure, and place the pots in an exposed situation. *La Grosse Sucrée* and *Vicomtesse Héricart de Thury* are about the best for early work.

Melons : See previous directions.

Hardy Fruit : In light dry soils *Apricots* will be the better for a good soaking of water previous to the ripening of the fruit ; wash the trees well with the

garden engine. Now make the final thinning of *Peaches* and *Nectarines*, also of the finer varieties of *Plums* and *Pears*. Attend to previous directions in regard to thinning and stopping the young shoots of all trained fruit-trees, and nail in the young growth of *Peaches* and all wall-trees at once; keep the *Peaches* well syringed in the evening, after dry, hot days. *Strawberries* will require frequent waterings, if the weather be hot and dry; tie up the heavy late kinds, and net the fruit to protect it from birds, which will also be beneficial, by affording partial shade to the fruit; layer the runners intended for forcing in pots, as well as those that are required to form new plantations. Keep the hoe moving among all fruit-trees.—J. POWELL, *Frogmore*.

VEGETABLES.

The earlier portion of the summer, up to the time we write, has been dry, and not of the most congenial character for the growth of crisp and succulent vegetables; such, moreover, as must have afforded unmistakable evidence of the good effects of deep and efficient culture. We have seen upon indifferently cultivated ground, both *Lettuces* and *Endives* spring-sown, and not such as have been transplanted, bolting freely during the first week in June, than which no better illustration need be of the loss which accrues from indifferently-prepared soils; at least three-fourths of the labour required to get soils into the best condition may have been expended on these; how much gain, therefore, attaches itself to the expenditure of the small addition necessary to complete its preparation—even the saving of the whole crop. Moreover, in the same degree as such transient crops as those named above suffer, so must all others, even though they may not exhibit the mischief so readily and so unmistakably.

No further delay must be permitted in regard to transplanting into their permanent quarters all kinds of *Winter Greens*, *Broccoli*, &c.; the earlier these are planted out, the better will they establish themselves, and become vigorous, and able to yield an abundant produce at the proper season. Successional sowings of *Endive* (particularly Batavian), *Lettuces* (summer Cos types), *Turnips*, *Spinach* (round-seeded), *Radishes*, &c., must be made about twice during the month, and this at all times, if possible, during, or immediately following, showery weather; but if no showers occur, then it will be necessary to keep the seed-beds thoroughly moistened until germination takes place. If the weather continues dry, many summer crops will be greatly injured by the fly, more especially the black or turnip fly; these must be watched for and kept at bay, by dusting lime or soot over the young plants, while the morning dew rests upon them, while the young seedling plants must be kept root-watered, to aid them in outgrowing these troublesome attacks. *Celery* and all other crops requiring such aids must be periodically watered, especially where an early supply of the former is required, as without this assistance it is not possible to succeed thoroughly. As a material aid to this and similar plants, surface mulchings cannot be held in too high esteem. Where spring *Cabbages* have succeeded well, it will be advantageous to cut away the major part of the large leaves remaining upon the stalks after the cabbages have been removed, and to retain the bed, and so insure an abundant supply of young sprouts. Make also a main sowing of *Coleworts* or *Hardy Greens* to “heart up,” and afford a useful supply towards the late autumn and early winter months, at which time a sowing now made will “come in” very useful.

Nail up *Tomatos* and well water them periodically; do not commence stopping or pinching them back too early, as this not unfrequently tends to check growth, without in anywise enhancing the ulterior merits of the crops.



Lilium canadense:

W.H. Fitch del.

1. var. rubrum. 2. var. rubro-flavum.

Make other sowings of *Peas* and *Dwarf Kidney Beans* about the 8th and 20th of the month, the latter date being about the time when the last sowings for the season are to be made. Of *Peas*, *Ne Plus Ultra* may be sown at the former date, and *Carter's First Crop* at the latter. If the ground is dry, as it generally is, it will be necessary to well water the seeds in the drills when sown.—WILLIAM EARLEY, *Valentines*.

GARDEN LILIES.—CHAPTER VIII.

WITH AN ILLUSTRATION OF *LILIUM CANADENSE*.

THE accompanying illustration of *Lilium canadense* was prepared from some specimens grown by G. F. Wilson, Esq., in his garden at Weybridge, and exhibited by him at South Kensington in the summer of 1874. It shows this to be a very pretty small-growing species, somewhat variable in character; in fact, on this occasion Mr. Wilson produced three forms, namely, *L. canadense rubrum*, *rubro-flavum*, and *flavum*. It is the two first-mentioned of these varieties that are represented in our Plate.

Our last chapter was devoted to *L. Washingtonianum* and *purpureum*, plants which some botanists consider to be varieties of the same species, but which horticulturists affirm to be thoroughly distinct types of the Eulirion group. We now pass on from them to the Martagon group.

16. *LILIUM CANADENSE* (*Botanical Magazine*, tt. 800, 858).—A very pretty and slender-habited Lily, with erect, terete, smooth stems, growing from 1 ft. 6 in. to 3 ft. high. The leaves grow in whorls which are 2 in. or 3 in. apart, each whorl consisting of several oblanceolate acute spreading leaves, of a pale but bright green colour, the lower ones 2 in. to 4 in. long; the upper whorls just beneath the flowers are sometimes broken up, and a few scattered leaves occur. The flowers vary from one to six on the stem, three or four being a usual number on fairly vigorous examples; they spring from the upper whorl of leaves, and are pendulous on pedicels 2 in. to 3 in. long. The



LILIUM CANADENSE.

perianth is campanulate, from 2 in. to 2½ in. deep, the divisions spreading for about half their length, lanceolate, and sharply pointed; it varies in colour in the different forms, being either yellow, orange-yellow, or red, always, however, marked with copious dark red spots towards the base; Mr. Baker mentions that they are pubescent at the tip, not down the back, and that they are not papillose or pubescent down the groove. The stamens are shorter than the perianth, with orange-red anthers 4 in. to 6 in. long; the style is 1½ in. long, about equalling the stamens. The flowers are produced at the end of June and the beginning of July.

The accompanying plate shows the variety *rubrum*, which is of a bright red colour, with the basal portion thickly dotted with dark red; and *rubro-flavum*, which has an orange-red ground-colour, and is intermediate between the other two. The

third variety, *flavum*, which is not represented, has clear yellow flowers marked with the characteristic spotting.

The Lily appears to be common on the eastern side of North America, in Canada, and the United States, extending southwards to Georgia. The allied plants of the western side of the Continent are distinct; and of some of these we shall shortly publish illustrations.—T. MOORE.

LATE PEARS.

IT is a matter of such importance to most gardeners to be able to place a dish of good Pears on the table in the spring months, that one hails with delight any addition to our stock of really good sorts. I thank your correspondents, Mr. Tillery and Mr. Saul, for the lists contributed at pp. 36 and 79. I find, however, considerable difference as to the period of ripening in my locality, compared with that from which Mr. Tillery writes. For instance, at Studley Royal, *Hacon's Incomparable* is usually in use in November and December, and very fine. *Doyenné d'Alençon* has never given me a presentable pear. *Joséphine de Malines* I planted largely some years ago, and have had plenty of fine-looking fruit, but they have been utterly worthless to eat. *Ne Plus Meuris* is, on the other hand, a really good, melting, and valuable Pear, but I have never been able to keep it after the end of January. *Bergamotte Esperen* has supplied me with pretty good pears during February and March; and now (April 20) *Beurré de Rance* is the only one I have really fit to eat, and this will keep on the supply till May, after which time the influx of Strawberries, Grapes, Peaches, &c., renders a supply of Pears less important.

We have a good many reputedly good kinds, that bear well and keep well in the fruit-room till June, but with us they have never been of any use, except for stewing. Amongst this number is *Bezi Mai*, mentioned by Mr. Saul; it is a fine-looking Pear, and bears remarkably well, but it has never proved melting with me, yet I consider it a valuable pear for stewing at this season of the year. I believe we shall most of us have to gain our experience on the spot, as to the Pears really suited to our locality; for I find Pears that were valuable in the South of England were worthless at Studley, and I am every year cutting down and regrafting with such sorts as prove most useful. Although the process is somewhat slow, it is becoming sure, by furnishing a constant supply.—JOHN CLARK, *Studley Royal, Yorkshire*.

PENTSTEMONS.

THE best varieties of Pentstemons are plants of the greatest value for the flower garden, especially for mixed borders. They commence flowering early, and continue until destroyed by the frost. Many of the varieties are exceedingly showy and ornamental, and are invaluable for furnishing an abundance of flowers for decorative purposes. They are grown in most gardens of any note, but not so largely as they deserve to be. They grow well in a good

rich soil of a sandy nature. Many of the varieties will stand through an open, mild winter, but they suffer more or less in severe ones. The past winter made clean work of all in the borders here. A stock of cuttings should always be struck in the autumn; these may be wintered in a pit or frame, and should be kept near the glass, so that they may have plenty of light; they should also have plenty of air, and be kept rather dry, and the frost should be excluded. With a little attention they are easily wintered. When there is plenty of convenience they should be potted off early in spring; they will then make good plants to put out early in May, and will soon commence flowering, continuing to do so until injured by frost. They may also be planted at once in the open borders out of the cutting-pans, and will do very well, but do not come into flower quite so soon as when potted off.—M. SAUL, *Stourton*.

EUPHORBIA FULGENS.

I CAN fully endorse all that Mr. Earley says in favour of this plant. We were cutting fine large wreaths of it for six months or more in the season, and could have done so for a month longer if required. I think, that to have this plant in a really fine condition, it should be allowed liberty to run freely at the roots. We had here about 2 ft. 6 in. of a wall above a narrow shelf which we wanted to hide. We therefore procured galvanised wire of the above width, and set it on edge on the shelf, about 6 in. from the wall; also pieces of wood 1 in. by 1 in., of the same width as the wire, with a small staple driven in at one end, the other set upright on the shelf. A piece of wire was fixed to the staple at the other end, this wire being long enough to reach to the wall-plate, to which it was fixed. A small nail placed behind each of the wooden uprights at the bottom kept them in their place. The galvanised wire being now reared on edge, we packed a quantity of rough moss against it on the inside, which kept the soil from dropping out. When this was done, we filled up with good light rich loam, and pricked in small pieces of *Selaginella denticulata* and *Adiantum* all over. On the top the *Euphorbia fulgens* was planted, and trained up the glass (*Ipomœa Horsfalliæ*, *Clerodendrons*, and many other things will suggest themselves), when from October to April we were able to gather something to help fill the cut-flower basket, and something for button-hole making, as well as large wreaths of the *Euphorbia* for the hair.—A. HENDERSON, *Thoresby*.

NEW HYBRID HELLEBORES.

IN a very interesting paper communicated some time since to the *Gardeners' Chronicle* (1874, i., 118), Professor Karl Koch published some geographical and other notes on some of the species and hybrid forms of Hellebores, of which notes we reprint the following abstract:—

“I observe that the Christmas Rose, *Helleborus niger*, is still held in great esteem by the English; with us it has long been forgotten, and is rarely found even in cottage gardens or in sequestered towns, where, however, it might still play an important part, for, on account of its flowering at Christmastide, it is connected with all sorts of traditions. It has, moreover,

been considered to be the plant which furnished the Black Hellebore of the ancients, the infallible remedy in cases of insanity and epilepsy; but that was the produce of another, though similar, plant, which, in early ages, grew chiefly on the Island of Anticyra, in the Ægean Sea. Upwards of 2000 years ago, people suffering from any kind of nervous affection were sent to this island to eat the Hellebore root in a raw state, just as we now send our sick to the different watering-places.

"But the Black Hellebore is by no means identical with the Hellebore of the East, which was found by Tournefort in the mountains of Pontus, and rediscovered by me, in nearly the same place, in 1843, but another species, that is probably restricted to Greece, including the islands, and the southern part of European Turkey. It was named *Helleborus officinalis* by Sibthorp, and *H. olympicus* of Lindley is the same plant. The true *H. orientalis* of Lamarck differs essentially in having leaves with a hairy under-surface.

"A third Oriental species grows on the southern declivities of the middle Caucasus, and is unquestionably the most beautiful. Russian botanists have invariably confounded it with *H. orientalis*. I found it as early as 1837 in the vicinity of Tiflis, and at once took it for a distinct species, readily distinguished by its particularly large pure white flowers, covered with distinct deep red spots. In the year 1845 it was in cultivation in Belgium, where it was mistaken by the elder Morren for *H. intermedius*, Gus. Later the plant was sent from St. Petersburg to the Berlin University Garden, and Professor Braun, after determining my specimens collected in the Caucasus to be the same, described it under the name of *H. guttatus*, a name that must be retained for it.

"A fourth species was observed in Hungary by Waldstein and Kitaibel, and described as *H. purpurascens*. This occurs in two well-marked forms on the western slope of the Caucasus into the Black Sea; the dark-flowered variety has been described by Dr. Regel as *H. colchicus*, whilst the paler-flowered variety was already known in gardens under the name *H. abchasicus*.

"These historical notes will doubtless interest your readers, because the species last named have yielded, through cross-fertilisation, varieties of rare beauty and diversity, which I cannot too strongly recommend. At this time of the year there are no more beautiful or more useful plants than these hybrid Hellebores. Although they would flourish and flower out-of-doors in England, I should, nevertheless, advise growing them in pots, by which means they could be removed at the flowering-time to whatever part be desired.

"To the lamented M. Sauer, the late superintendent of the Berlin University Garden, and one of the most intelligent gardeners we have had in Germany, is due the merit of raising hybrids from *H. guttatus* and *H. abchasicus*. His first attempt was made as long ago as 1851, with the two species just named, and proved highly successful, resulting in the production of two series of variations. The plants of the *H. guttatus* were more vigorous, and bore a far greater number of flowers than the type. The flowers of some were bell-shaped, whilst others retained the spreading sepals of the parent species. The dark red spots appeared larger and assumed more of a brown tint; in some instances the whole flower was of a brownish colour. The second series of *H. abchasicus* had, for the greater part, paler flowers, sometimes with white spots, but often destitute of them. Both races were four and five years from seed before they flowered. After some years M. Sauer saved seed from the prettiest of these varieties, and as Hellebore seed soon loses its vitality, sowed it at once. This issue was still more brilliant. Still further experiments were tried, with the same satisfactory results.

"Meanwhile, *H. officinalis* (*olympicus*) was introduced into the Botanic Garden. Above all, a variety with blood-red leaves (? calyx leaves) made a great sensation. M. Bouché, the superintendent of the garden, tried some crosses with this new species with no less success. The Berlin Botanic Garden possesses a collection of Oriental hybrid *Hellebori* which may with truth be designated as remarkable."

Subsequently Professor Koch recorded in the same journal (*G. C.* 1874, i., 480) the success which had rewarded M. Heinemann, of Erfurt, on his attempting to raise new hybrids between *H. guttatus* and *H. abchasicus*, some of which he refers to as possessing much beauty; one in particular was remarkable, in having the bright brown sepals of *H. abchasicus* sprinkled with the differently-coloured spots of *H. guttatus*. Flowers of these hybrid varieties raised by M. Heinemann were sent in April last to the Editors of the journal above referred to, and from them we borrow the accompanying woodcut of one of the prettiest and most distinct among them. These hybrids varied in colour from purple to greenish white, many of the flowers being sprinkled with pink dots, which gave a very striking

appearance to the flowers. Some of the sepals were fringed, while in other flowers the tubular petals (formerly called nectaries), instead of being in a single row, were developed in two or three series.

The varieties raised in the Berlin Garden have, it appears, passed into the hands of MM. Ant. Roozen and Son, of Overveen, near Haarlem, by whom they will be distributed next autumn. They are catalogued under numbers as follows:—



HYBRID HELLEBORE.

"1. Flowers beautifully formed, 3 in. in diameter, bright dark purple and rose-colour, with numerous carmine-red streaks, charming leaves, rich and early variety.

"2. Decidedly the finest and most remarkable hybrid raised till now; flowers of fine form, stately, and well above the leaves; petals finely cut and covered, very large, often 3 in. in diameter; colour, pale-brown and purple-rose, with numerous sharp-bordered dazzling dark carmine-red spots, splendid variety.

"3. Flowers irproachable in form and attitude, very large and free-flowering, of dazzling purple rose colour.

"4. Smaller flowers, but in other respects exactly the same as No. 3.

"5. Flowers very large and flat, fine form, 3 in. in diameter, petals finely cut and covered, colour snow-white, very recommendable plant.

"6. Flowers of a very fine pure white, from 2 in. to 3 in. in diameter; their rich blooms, held up on tall foot-stalks, give to this variety a remarkably gay appearance.

"7. Fine-formed pure white flowers, the centre of the petals, covered with small red spots, forms a red star on the white ground of the flowers.

"8. Flowers very large, fine-formed and flat, the flower-stock held far above the leaves; coloured like some orchids, snow-white, with large round nicely-bordered dark purple-red spots, splendid variety.

"9. The spots are smaller and less remarkable than in No. 8, in other respects of same merit, very fine.

"10. Large white flowers with countless waxy red spots, forming a star like No. 7.

"*Præcox major*, large snow-white flower, earlier than all the before-named varieties, very commendable on account of its free-flowering qualities."

The general superiority of these seedlings is said to consist in their much-improved form, more floriferous habit, larger and finer flowers, of more distinct and in some cases dazzling colours. The leaves of these valuable hybrids have nearly all the same character; they are about 12 in. in diameter, sharply-toothed, dazzling dark green, with lighter ribs and lines, on taller stalks, according to their age, more or less inclining and evergreen, as damaged foliage is always replaced by a new growth.—T. MOORE.

INFLUENCE OF SOILS ON PEARS.

WE yet, I fear, possess but a limited knowledge of the influence of certain soils and localities upon the different kinds of Pears, and hence the many different opinions as to their quality. The stock, too, is sometimes culpable when it is least suspected, and consequently escapes censure.

B. says that with him a certain pear is all that can be desired. C., on the other hand, asserts that it is of little or no value. Such being the case, descriptive catalogues are of no use beyond intimating what the growers have for sale.

I presume that most gardeners will agree with me when I assert that we labour under difficulties as to what kinds should be selected to suit various conditions. Would it not be well to request your numerous contributors to furnish a list of those Pears which are found to be best suited to their soil and situation? This would to a great extent solve the problem. I was gravely told, not many months ago, by a person who ought to have known better, that the character of the soil for fruit trees was immaterial—quite a secondary consideration, so long as they enjoyed a congenial climate, from which one would infer that the atmosphere provides all the elements of nutrition.

I have been led to make the preceding remarks from reading the statements made by Mr. Tillery regarding the quality of certain Pears. To a great extent his experience differs from mine here in Gloucestershire. I am aware that *Joséphine de Malines* has the reputation of being an excellent winter Pear, but with me the flavour has never advanced beyond that of a second-rate variety, although I have grown it for a good number of years, both as a standard and against a south wall. *Hacon's Incomparable*, too, cannot be called more than a second-class kind here. It is certainly a fine-looking fruit, but the difficulty is to secure more than one-third of a crop, so I have discarded it from our collection. I can-

not understand why *Léon le Clerc de Laval* should be introduced as a dessert Pear, as it is purely a culinary variety. I have grown it over twenty years, and never found it to show the least sign of ripening. Even then, in what does its value consist, when we possess several kinds of superior excellence for that purpose, such as *Bellisime d'Hiver*, *Catillac*, *Uvedale's St. Germain*, and *Vicar of Winkfield*? We have a dessert Pear named *Beurré Sterckmans*, recommended in fruit catalogues as a mid-winter fruit, melting and excellent, the very reverse of what I find to be the case; it is sugary, dry, and crisp in the flesh, while the flavour is by no means agreeable.

For some years we have grown a dessert Pear under the name of *Sabine d'Hiver*, which in shape and colour to a certain extent resembles Easter Beurré but is superior to it in flavour, and ripens about the same time, that is, the beginning of February. The Easter Beurré is very uncertain on this point. I have known it to be fit for use so early as October, and to come in by driblets throughout the winter. There is a valuable pear, ripening towards the end of January, called *L'Inconnue*, which is by no means common; still it cannot be too highly recommended, being melting, juicy, of a very agreeable flavour, and very productive.—ALEXANDER CRAMB, *Tortworth Court*.

* * We shall be ready to print any such lists as those Mr. Cramb refers to above. The nature of the soil and climate should be briefly indicated.

FRUITS : WHICH SHALL WE GROW—SWEET OR ACID ?

THIS is the question I put seriously to housekeepers and horticulturists. The matter, as far as puddings, pies, and even preserves go, is very much in their own hands. We may either grow or buy our sugar at will. On the former plan we have sugar free, on the latter at wholesale or retail prices. Habit has established the custom of growing sour fruits—I use the term relatively—for culinary purposes; these fruits have to be sweetened before they are eatable; the more acid the fruit the more sugar is used, the less the less. It follows that it might be possible to use fruit for culinary purposes so sweet as to enable us wholly to dispense with sugar. Prejudice stands ready to protest that by so doing we sacrifice flavour. How so? unless, indeed, we are prepared to contend that Beet and Cane sugar, which are those mostly employed to sweeten our other fruits, are better, sweeter, higher-flavoured, than the sugar secreted in Apples, Pears, Plums, or other fruits. But such an argument proves too much, and really asserts that our artificial compoundings are better than nature's more perfect mixture. We certainly do not act so in regard to our dessert fruit. In them we prefer sugar of nature's manufacture and storing, else as far as mere texture goes, many kitchen apples would, with plentiful additions of sugar, be equal to sweeter dessert fruit. But custom and common-sense are in accord in reference to our dessert fruits, and seemingly divorced in regard to our cooked fruits. Perhaps we may buy sugar to support the grocers, as many prefer to have their daily glass for "the good of the house."

Assuredly it is not a very reasonable proceeding to grow sour fruit, in order to pile sugar over it both before and after cooking, when fruits sweet enough for almost every palate might be grown with equal ease, on the same area, and to the same or greater weight. The argument of superior flavour has no foundation in reason, and will not stand the test of trial. No Apples will make a finer pudding or pie than the *Ribston Pippin*, *Alfriston*, or *Cox's Orange Pippin*. On the contrary, these have an aroma, a bouquet, that the best kitchen Apples cannot reach. True, they may be too sweet for some palates. To those who prefer acid apples without sugar we have nothing to say; they will, of course, continue to eat them. But those who sweeten their tarts of *Lord Suffield*, *Beefing*, *Gloria Mundi*, and *Wellington* up to the *Ribston-Pippin* standard of sweetness, had far better reduce their grocer's bill by using the sugar at first-hand and free of cost, in their dessert Apples.

Already this sensible advice is being acted upon in regard to Pears for stewing, and for puddings and pies. Some, however, almost need to be told that Pears make better puddings and pies than Apples, as well as that the best dessert Pears, just before they are fit for table, are best for both, as well as for stewing. Let any one try *Marie Louise*, *Glou Morceau*, *Beurré Diel*, *Duchesse d'Angoulême*, *Vicar of Winkfield*, *Louise Bonne of Jersey*, or *Brown* or *Golden Beurré*, and he would not care to eat any more of *Black Worcester*, or *Catillac*, or even of *Uvedale's St. Germain*, unless it might be the latter in March or April, after even the *Easter Beurré*—one of the finest dessert Pears in existence, as well as our very best for stewing and puddings and pies—had gone out of season.

The same principle is applicable to Plums. Why cook *Bullaces*, *Damsons*, or even *Victorias*, when *Gages* galore, *Jeffersons*, and *Golden Drops* are filled with sugar and the most delicious juices ready to hand?

Much sugar might be saved in preserving fruit by growing only, or mostly, the sweetest. As things have been managed in the past, the sweetest varieties have been ticketed insipid. And why? Because all fruits of the same species have generally been sugared alike—pound for pound, or three-quarters of a pound of sugar to a pound of fruit, according to the receipt of the books on house-keeping, and this whether it contained 10 or 20 per cent. of saccharine matter, with as much immutability as the old Medio-Persian law, or that of three minutes to the boiling of an egg, big or little. Hence, of course, the best, that is, the sweetest, fruits were sugared to excess and made insipid, and many inferior fruits were and are under-sugared, and run into rottenness and acetous fermentation.

Why, even among *Apricots* there are wide differences in the proportions of saccharine matter, and I do not hesitate to affirm that the *Kaisha* ought not to have so much sugar as the *Moorpark*, and that this again is sweeter than the *Breda*. Of course there is a much wider range among *Plums*, and indeed a considerable difference is allowed between *Gages* and other varieties, although the matter has not been considered with that thoroughness and minuteness in regard to the different varieties that its importance demands.

Coming down to Bush Fruits, what differences in the per-centage of sugar we find in the different varieties of *Gooseberries*, *Currants*, and *Raspberries*! Yet are they all cooked and preserved on the limp principle of pound per pound, or so much per pound, all round. *Strawberries* are often totally ruined by an excess or a deficiency of sugar, arising from an utter disregard of the per-centage already existing in different varieties. This not only varies with the sorts, but likewise with the seasons, and some general means should be devised for testing, with sufficient approximation to exactness, the per-centage of sugar before the fruit is preserved.

But my chief object here now is to advocate the cultivation of the sweetest varieties of fruits chiefly or only, and thus to secure the sugar in our fruit-puddings and pies, and as much as practicable of it in our preserves, free of cost. —D. T. FISH, *Hardwicke*.

NOTES ON AURICULAS.

AURICULAS, both Show and Alpine, should now be in cold frames, under a north wall or hedge, but where they can be protected from heavy rains, and shaded from hot sun. They are here to mature their growth and ripen their seed, if any have been allowed to carry seed-pods. Plenty of air and sufficient moisture is what are required to minister to their well-being. Young shoots have come up, or are coming up, from the collar of the plant, and by means of these off-shoots any one variety is propagated. Some throw off these side-shoots very sparingly, and only at intervals—generally some fine sorts of which it is very difficult to get a stock, and which is in frequent demand.

Growers vary somewhat as to the time for potting. In all probability, as early as possible in the season is the best time, but regard must be had to the fitness of the off-shoots for potting. Before they are stripped from the parent plant they ought to be furnished with some rootlets, so as to lay hold of the soil when potted. According to their size, they should be placed in large or small 60-pots, and placed in a cold frame, and kept cool and fairly moist till established. A nurseryman likes to get the young plants firmly set in their pots before sending them out in the autumn.

On one occasion, when narrating his experience with the Auricula, the late Mr. George Lightbody—in his day a Nestor among Auricula-cultivators—said: “Some of our fine show Auriculas are so inclined to split into increase that, except rubbing off the eyes when decayed leaves are removed, and other expedients are resorted to, plants of this habit cannot be kept up to blooming size. Persons wishing to keep their collection in proper order for bloom, should not allow many off-sets to form. My own practice is never to allow more than two off-sets to form at one time on the strongest growers, and only one on the weaker. Off-sets of this description can be got up to blooming size in a year or two, whereas when a plant is allowed to run wild, it will take many years to bring its progeny into that condition.” Was the Auricula more prodigal of off-sets with that

grand old Auricula-grower in the North than it is in the South? For genial and clever John Ball, of the Royal Nursery, Slough, can point the visitors to sorts (happily very few) that appear to have altogether ignored any sense of the responsibility of increase.

Mr. Lightbody's favourite time for potting was the end of July. John Ball will get many of his potted even earlier. The following was one of Lightbody's special directions:—"Let this necessary work be commenced in such time that the whole collection may be shifted by the first week in August," and the reason assigned was that the time specified immediately preceded that when the plants make their second growth, besides which, the off-sets are sure to be well-rooted, and are more easily slipped from the parent plant.

A good Auricula soil is made up of good yellow loam of a fibry character, and leaf-mould, in equal parts, some thoroughly decayed manure that will freely crumble to pieces, added in the proportion of one-half, and enough silver-sand to keep the compost open. The whole should be mixed together, laid up in a dry place, and occasionally turned and sweetened previous to using. The last generation or two of growers used to excite the growth of these plants by stimulating them over-much; the not less successful and enthusiastic cultivators of the present generation prefer to grow in a cool, generous, and not over-rich compost.

Over-potting is a danger to be guarded against. The large plants will do well in 32-sized pots; the smaller ones in 48's and large 60's. There should be abundant drainage, and the soil be pressed firmly about the roots. The Rev. F. D. Horner is not at all particular about using his soil fine. He adds small lumps of fibry turf, and the roots of the Auriculas appear to like to get hold of these pieces, and make their way down through the soil. The soil should be used sufficiently moist, as water is not immediately required at the roots; a little may be administered as soon as the plants are repotted, to guard against the leaves becoming flaccid for want of it.—R. DEAN, *Ealing*.

PROTECTION OF FRUIT-TREES IN BLOSSOM.

THE present season has not been calculated to severely test the efficacy of the various materials used as means of protecting the blossoms of the Apricot, Peach, and other fruit-trees trained to walls, as in many instances abundant crops of fruit are found to have set, where no protection of any kind had been applied.

I have had no experience with the movable glass copings of some 18 in. or 2 ft. in width, which some consider as very effective; but I have long found a temporary roof composed of old lights some 10 ft. in length, with a moveable curtain of frigi-domo in front of them, to be all that could be desired as a protection. It is not, however, always possible to secure a sufficiency of lights to cover in this manner all the trees requiring protection; consequently I have had recourse to various other means to effect this purpose, and have used with varying

results different materials, such as old fishing-nets, tiffany, woollen nets, mats, hay and straw bands, beech-boughs, fern-fronds, &c.; but I now give preference to the use of small branches of the common spruce, which I consider better than any of the other materials I have just mentioned, with, of course, the exception of glass.

Hay and straw bands are exceedingly littery, and are not always found to be effectual, while fern-fronds, being very light and brittle, are blown about by the wind. Similar objections also apply to beech and laurel-boughs; but when the trees are lightly covered by small boughs or twigs of the common spruce, newly cut from the trees, and applied when the blossoms are beginning to expand, the leaves being small, do not greatly exclude light and air from them, and as the season advances, the leaves of the spruce-twigs continue to fall gradually off without producing litter or confusion. At the same time, protection is gradually becoming less necessary, so that by the last week of April the twigs may generally be removed altogether, from Apricot-trees, at least, as by that time the natural foliage will generally be sufficiently advanced to afford the necessary protection to the newly-formed fruit.

I cannot say whether there is or is not anything in the resinous nature of the spruce-branches which proves inimical to the development of insect life, but I have always found that where this material has been used, the trees are less infested by aphids and leaf-rolling caterpillars than in cases where other materials have been used for the purpose of protection.—P. GRIEVE, *Culford, Bury St. Edmunds*.

GARDEN GOSSIP.

EXHIBITIONS are quite the order of the day in the months of May and June, and several have taken place around the metropolis since our last number was printed. The Royal Botanic Society has held two—one on May 26, and another on June 16. The first was remarkable for its abundance of Flowering-plants, imparting a rich colouring to the whole display; the second was also a well-filled and nicely varied exhibition of fully average merit. The Royal Horticultural Society held its great summer show on June 2; and thanks to the competition for Mr. Bull's silver cups, it proved one of the most interesting shows ever held, its principal feature being New Plants. Some fine Palms, Dracænas, and Cycads were also produced, but there was a deficiency of flowering-plants. The show of the Crystal Palace Company, on May 29, was another excellent show, most remarkable for its Pot-Roses, Stove and Green-house Plants, Orchids, and New Plants. A large group of plants belonging to the Company, and arranged by Mr. G. Thomson, one of the officials, was most effective.

— **C**ULTIVATORS of Ferns, even those of some experience, are frequently perplexed with the results of their attempts to raise *Ferns from spores*. M. Mayer, in a very interesting paper on this subject, points out some of the chief difficulties and the best means of surmounting them. The principal aim should be to exclude the spores and germs of other Ferns, Liverworts, &c., but this is no easy task; in fact, it is impossible to do so altogether. To abate the evil as much as possible, the animal as well as the vegetable life contained in the compost used must be destroyed, and this is most effectually done by boiling or baking it for a short time, and using it immediately afterwards. The greater danger, however, is in the Fern-house itself, where there are spore-bearing plants of some of the exceedingly fertile species of *Pteris*, *Gymnogramma*, &c., the spores of which

penetrate every nook and corner, and being of much more rapid vegetation than many others, they take possession of the pots or pans, and effectually choke the species sown. The operation of sowing, then, should be conducted in a place where there is the least probability of the spores of other species being present floating about in the air. There is also a risk in sowing several different sorts at the same time, and in spite of every precaution, intruders will make their appearance. Twenty years is about the limit, so far as M. Mayer's experience goes, up to which the spores of some of the freer-growing Ferns will germinate.

— A correspondent of the *Gardener's Record*, writing on the *Raising of Primula japonica from Seed*, remarks that his system of doing this is not only simple but successful. Instead of light loam and leaf-mould, he prefers good holding loam, with a little sharp sand only. In August, when the seed is perfectly ripe, he prepares boxes or pans by draining well. The soil is filled in and thoroughly pressed down, the seed sown evenly, covered lightly with the same soil, and watered till the whole of the soil is moistened. They are placed in a shady part of any structure the sun will never touch, so as to require watering as little as possible during autumn and winter, but never allowed to get dry, water being the secret of success or failure. When the seed lies dormant from August till March, in light soil, not well pressed down before sowing, every watering takes it down below the vegetating point, and the result is only a few seedlings, instead of thousands. When the seedlings appear, water is still the secret of success, for there is no fear of their damping-off like other things.

— THE new *Queen Onion*, though a small variety, is, on account of its earliness, likely to prove one of the most useful sorts for certain purposes. At Chiswick it was early in June bulbing rapidly, while the other sorts on trial, sown at the same time, were not making bulbs. For autumn-sowing Mr. Tantom considers it invaluable. Those who are likely to require good-sized fresh onions at this season of the year should, amongst their autumn-sowings, include a good breadth of the *Queen Onion*. We make three sowings, he says, of *Tripoli Onions* every autumn,—the first very early in August, the second about the middle of the month, and the last very early in September. The first sowing comes in early, and is often useful, but as sportsmen say, won't last, for they run to seed, especially if the season is dry, as this has been; but the second and third, if transplanted properly, give us a large supply of good bulbs until the spring-sown ones are ready. The reason why autumn-sown and spring-transplanted onions grow thick-necked and bulb badly is deep sowing and too deep transplanting; the *Queen* bears this less than any. Let the ground be well pulverised, and made firm and level, and let the plants be dibbled in carefully, covering only the roots.

— THE beautiful rose-coloured *Spiræa palmata* is now grown for the London markets. It has this season been uncommonly well grown by Mr. Oubridge, with the same heat and the same treatment in every way as that given to the *Astilbe japonica* (*Hoteia* or *Spiræa japonica*), flowering freely in the month of March. As a forced plant, this *Spiræa* is beautiful beyond description; the leafage takes on a bright grass-green colour, and the flowers an exquisite shade of rosy-magenta. The way to manage the plant is to divide into single crowns, and grow one season in rich soil, with plenty of water, and pot up early and store in frames until the time arrives for forcing, and then the treatment that suits the *Astilbe* is all that it requires. Five-inch pots suffice.

— THE pretty hybrid *Libonia penrhosiana* was raised some few years since between *Libonia floribunda* and *Sericographis Ghiesbreghtii*, at Penrhose Castle. The plant is interesting, not only for its beauty, but for the fact that it is a hybrid between two so-called genera, *Libonia* and *Sericographis*, thus serving to show how arbitrary are our generic distinctions. M. Linden has, it appears, obtained the same hybrid, and apparently unaware of its previous production, sent it out as a new plant under the name of *Sericobonia ignea*, which indicates its dual origin. Here, then, is a fresh garden synonym.

— ONE of the most useful plants for spring flower-gardens is the *Double Scarlet Poppy Anemone*, and it is a colour difficult to obtain. To have good beds of this, we have seen it recommended to plant half the tubers in October and half in December, the later ones being planted between the early ones; this gives a long succession of bloom.



W.H Fitch del.

Genista virgata.

GENISTA VIRGATA.

WITH AN ILLUSTRATION.

FOR the opportunity of figuring this rare and comparatively little-known shrub, we are indebted to Mr. Anthony Waterer. It would be an evergreen, were it not that its persistent leaves are grey from the presence of a covering of whitish hairs, and when in blossom in the month of May, it is literally enveloped in its pretty yellow blossoms. At Knap Hill it is found to be quite hardy, and few things are more desirable for the decoration of sheltered shrubberies, in situations where it will thrive. It is a compact-growing shrub, producing strong shoots (the upper part of one of which is represented in our figure) from which issue slender twiggy branches, clothed with oblong-lanceolate leaves, clothed with silky hairs, while the flowers are in racemes, of moderate size and of a clear pale yellow colour, the standard being marked with a spot of golden-yellow near the base.

The species is a native of Madeira, and appears to have been introduced to the Milford Nursery in 1825. It was planted out there in 1833, and withstood the severe winter of 1836-7. The plant was formerly cultivated at Chiswick, where Dr. Lindley states that it formed a loose spreading bush, of about 4 ft. in height, and was found capable of enduring the ordinary winters of the climate of London, if placed in a dry situation and planted in a loamy soil. It flowers freely in May and June. Nothing can be more bright and cheerful than the aspect of this graceful shrub when in full blossom.—T. MOORE.

THE CULTURE OF WALL-FRUITS.

CHAPTER IV.—THE PEACH AND NECTARINE.

WE come now to the consideration of the practical application of the principles set forth in the preceding chapters, and I think it will conduce to the more useful and comprehensive rendering of the application of those principles, if we take the different sorts of fruits separately, because although they possess certain characteristic qualities in common, yet the treatment best suited to each differs materially in its mode of application, although precisely the same results may be aimed at.

Having this end in view, I place the PEACH and NECTARINE first on the list, as they appear to me to be worthy of a prominent place, not only for the general excellence of their produce, but because to my mind they are, of all fruits under an artificial system of cultivation, the most amenable to discipline. Hence they may be regarded as the most desirable to be brought forward for the purpose of opening out a subject, which it will be my endeavour to simplify, and make as plain as possible for the guidance both of the amateur cultivator and the thinking young gardener. I say ‘thinking,’ because such knowledge does not come to a man by instinct, but by deep thought and careful research. Many hard-headed and practical men do occasionally hit upon a method of treatment

which is eminently successful, and make great boast thereof; but ask them for reasons, and they refer you to results. Now, a careful study of the principles I am advocating would enable young gardeners in most instances to trace such results to their proper causes, and thus their application could be made beneficial in many other instances.

Borders.—In carrying out any system of fruit-tree culture in its integrity, the first great consideration is the formation of the borders, and the procuring of the compost in which the trees are to be planted.

No border should have a less depth of compost than 2 ft., and therefore the condition of the subsoil below that depth must be taken as the guide to the necessary operations. If it happens to be an impervious blue clay, much care is required in order to provide a proper outlet for surplus water. To ensure this, the border should be excavated to a total depth of 2 ft. 6 in. next the wall, and 3 ft. 6 in. along the front of the border, the last foot in the width being sunk a few inches lower with a rounded draining-tool, to form a convenient channel for the free passage of water. This front drain of the border must be carried on to some outlet sufficiently below the level, to enable the water to pass away freely. The bottom of the border is to be left quite smooth, and the whole covered with broken rubble in sufficient quantity to reduce the border for compost to a uniform depth of 2 ft. Over this place some thinly-cut tough turf, to prevent the finer compost from trickling down amongst and choking up the rubble.

If, however, the subsoil is a yellow clay, with veins of sand, in many instances strongly impregnated with iron, such as there is at this place, it will be sufficiently pervious to water in a general way; but to provide for overdoses during long-continued heavy falls of rain, it is well to break up the bottom to the depth of a foot or so, and lay in some cross drains from the wall to the front drain, which is indispensable under all conditions of soil or subsoil. Some turf may be laid over both cross and front drains to keep them open, and the 2 ft. of compost added as before, always allowing an extra thickness for settlement.

But again, if the substratum is not properly soil at all, but consists of a dry and porous layer of gravel, or chalk, or rock, or sand, all of which are conditions to be met with, then the border must be excavated proportionately deeper, as I attach considerable importance to having a cool bottom. It would be well therefore, to excavate the border 3 ft. deep next the wall, and 3 ft. 6 in. at the front drain, which is all the drainage needful to carry off superabundant water. Once in dealing with a bottom of this description I broke it well up, and then covered the whole with clods of strong loam approaching to clay, dug out in spits with the turf adhering, and thrown in just as it was without any chopping; this was laid on to the depth of a foot, and then the two feet of prepared compost was added. The result proved that Peaches and Nectarines could be grown well on such a hot and dry substratum, and this I mainly attribute to the formation of a cool bottom. If I were put to the shift in such a case, I would sooner use

lumps of pure clay rather than not have a bottom sufficiently retentive of moisture.

I need not enlarge upon those cases few and far between, where the natural drainage is so good, and the soil consists of deep and friable loam, that it only needs to be trenched up, and the border is ready for planting; but in the course of time exhaustion must take place, and such natural borders will have to be subjected to the same routine of management as is required in the case of those most carefully prepared.—JOHN COX, *Redleaf*.

LITHOSPERMUM PROSTRATUM.

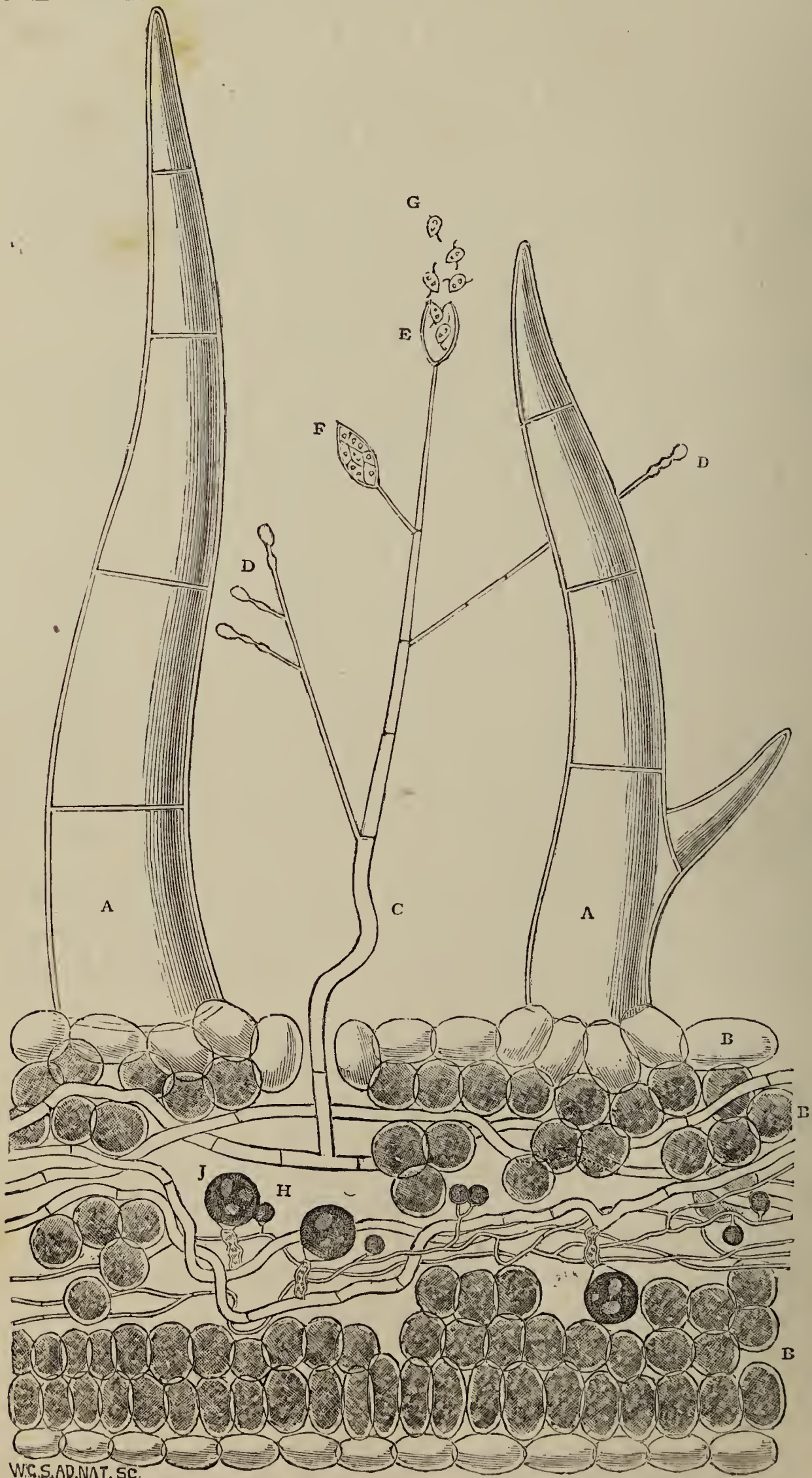
LITHOSPERMUM *prostratum* is at once one of the most beautiful and useful amongst hardy plants; the deepest-hued and most pleasing amongst blue flowers. It is a plant that has often been noticed, and very deservedly so, but I allude to it again with the view of publishing yet another feature of merit, which may be added to those more generally known.

Lithospermum prostratum is a plant of recumbent growth, the stems lying flat on the ground, evergreen, a native of France, and introduced amongst us some half-century ago. I have it flowering beautifully on the northern side of, and partly under, a huge Weeping-willow Tree—in fact, in a special position, where I have planted the Royal Fern, because I thought in this arid locality it would succeed best in a shaded damp and somewhat enclosed shrub-hidden spot. If, then, this lovely plant will succeed so well under such circumstances may it not be used freely in all sites and in most situations, than which a higher certificate of usefulness cannot be tacked to the character of any plant?—WILLIAM EARLEY, *Valentines*.

* * It grows and blossoms very freely in the deep, sandy, and peaty soils of Woking and of Weybridge, forming large flat evergreen patches, and blooming most profusely from the early summer onwards. It is often falsely called *Lithospermum fruticosum*.

THE FUNGUS OF THE POTATO DISEASE.

FOR years it has been the settled conviction of our leading naturalists that the insidious disease which for some thirty years has more or less each season damaged our potato crops, was due to the attacks of a microscopic fungus called *Peronospora infestans*—the fungus itself probably owing its destructive prevalence to certain warm moist conditions of climate which occur during the summer months, and favour its development. The life-history of this Potato fungus was, however, but imperfectly ascertained, and one link in the chain remained unknown until recently discovered by Mr. Worthington G. Smith, in examining specimens of what was at first supposed to be a new disease attacking the Potato. This link is what is called the resting-spore, by means of which the vitality of the plant is continued through the winter, after the mycelial threads and summer spores have perished. Mr. Smith soon arrived at the conclusion



W.C.S. AD. NAT. SC.

FIG. 1.—TRANSVERSE SECTION OF A FRAGMENT OF POTATO LEAF WITH THE *PERONOSPORA INFESTANS*.—
Enlarged 250 diameters.

that the *new* Potato disease was no other than the old enemy in disguise,—the *Peronospora infestans* in an unusual and excited condition. Under the microscope, two distinct forms of spore-like bodies were observed, the smallest of which was rightly determined to be the *antheridia* of the Potato fungus, and the larger the *oospores* of the same fungus—these latter, it is now ascertained, being the resting-spores so long sought for in vain.

Mr. Smith's account of his discovery was read by him at the meeting of the Scientific Committee of the Royal Horticultural Society on July 7, and was published in the *Gardeners' Chronicle* (1875, ii., 35); subsequently further observations of his, accompanied by illustrations from his own pencil, have appeared in the same journal (1875, ii., 68), and from this source we borrow the following illustrations, and Mr. Smith's remarks thereupon, somewhat condensed:—

“Figure 1 shows (greatly enlarged) a transverse section through the leaf of a Potato plant. The two great bodies at A A represent two minute hairs on the leaf, and at B B are seen the individual cells of which the leaf is constructed. When these hairs and cells are compared with the fine thread at C, which represents a branch of the Potato fungus coming out of a breathing-pore of the leaf, it will be seen how very minute the fungus is in comparison with the dimensions of the leaf. This fine thread is no other than a continuation of a thread of spawn or mycelium which lives inside, and at the expense of the assimilated material of the leaf. When the thread emerges into the air, as here shown, it speedily ramifies in different directions, and bears at the tips of the branches, as at D D, fruits which are termed *simple-spores*, or *conidia*, because from their smallness they are dustlike; these bodies are capable of germinating, and reproducing the species in the same way as any seed is capable of so doing. The Potato fungus has another method of reproducing itself in the larger *swarm-spores* shown at E, F. These are so called because, on the application of moisture (as supplied by dew or rain, or when applied artificially) they set free a swarm of from six to fifteen or sixteen other bodies known as *zoospores*, so named because they are furnished with two lash-like tails, and are capable of moving rapidly about like animalcules. This rapid movement usually lasts for about half-an-hour, and, like the dust-like conidia or simple-spores before-mentioned, the swarm-spores generally enter the breathing-pores of the leaf, and there germinate. So potent, however, is the contents of these bodies when set free, that it is capable of at once corroding, boring, and entering the epidermis of the leaf, or even the stem itself. These zoospores are best seen when within the swarm-spore F, where they arise from a differentiation of the contents, but when once set free (G) they are, from the extreme rapidity of their movements, very difficult to make out. In about half an hour they cease to move, their lash-like tails (cilia) disappear, and having burst at one end, a transparent tube is protruded, which is a similar mycelium in every respect with that produced by the simple-spore, and which grows, branches, and fruits in a precisely similar manner. These simple-spores and swarm-spores are lost in the production of the mycelium or spawn, and this fine thread-like material cannot, of course, survive the frosts and rains of winter, but must utterly perish with the perished leaves and haulm.

“A study of other species of *Peronospora* allied to the one which produces the Potato disease reveals the fact of a third mode of reproduction. The simple-spores and swarm-spores are termed asexual, because they are without sex, as distinguished from other bodies called oospores, which are produced by the contact of two sexual spore-like bodies, known as the antheridium (H), the male, analogous with the anther, and the oogonium, (J) the female, analogous with the ovary of a flower. The oospores, not till now seen for certain in the Potato disease, are the true resting-spores. Instead of being transparent and unenduring, as are the simple and swarm-spores, these bodies are denso in substance, black-brown in colour, and covered externally with reticulations or warts. They are produced from the mycelium, by the contact of the antheridium and oogonium, in the substance of the decaying plant; they are washed into the earth, and there they rest till a certain set of conditions makes them germinate in the year following their production, just as a seed falls and rests in the autumn and starts again into life during the following spring. The terms here used will be better understood if it is borne in mind that the oogonium is analogous with a pod; the oosphere within answers to the ovule, and the oospore (or resting-spore) to the matured seed. The antheridium with its contents is analogous with the anther and its pollen.

“In various other fungi nearly allied to the Potato fungus these resting-spores have been

seen, measured and illustrated, but till now the resting-spore of the Potato fungus has eluded all search. The reason generally given and accepted for its absence is, that the Potato is not the plant on which the fungus luxuriates to the greatest extent, and that if we only knew the plant it most affects (probably some South-American species of *Solanum*) we should then find plenty of resting-spores. It grows on various species of *Solanum* besides *S. tuberosum*; it is even not unfrequent on the woody Nightshade of our hedges, and it grows upon the Tomato and other Solanaceous plants. On these latter, however, it makes less headway than upon the Potato. As an instance in point, the allied pest of the garden Lettuce—*Peronospora gangliiformis*—may be mentioned. Here, if the resting-spores of the parasite are wanted, they must not be sought for in the Lettuce itself, where they are only sparingly produced, but in a plant belonging to the same natural order also commonly afflicted with the same parasite, viz., the common Groundsel. The resting-spores are said to be even more common in Sow-thistles than Lettuces. Therefore, although it is probable we shall have yet to look to some other member of the natural order *Solanaceæ* to find the resting-spores in any abundance, yet, as the resting-spores of the Lettuce-mould can by searching be found in the Lettuce itself, so the resting-spores of the Potato fungus have without doubt this year been found in the Potato plant.

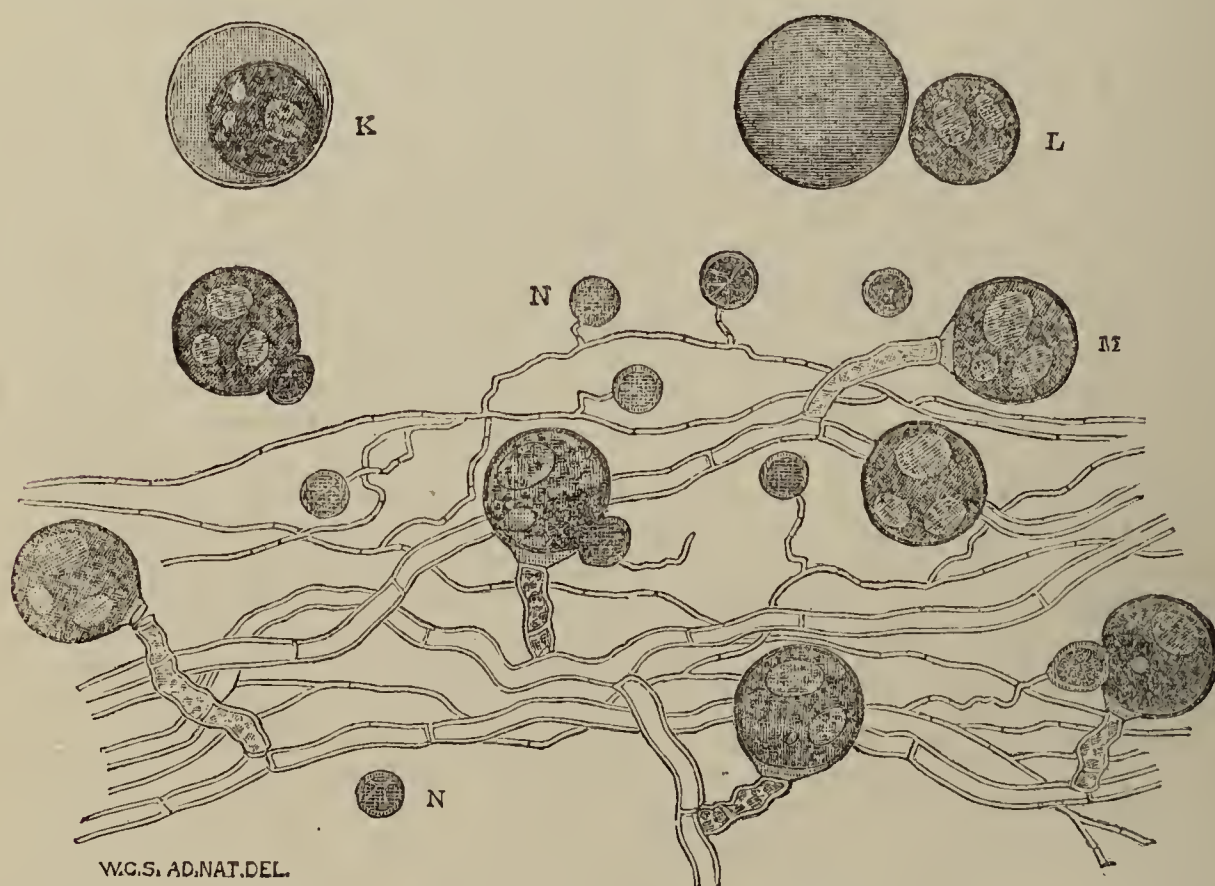


FIG. 2.—*PERONOSPORA INFESTANS*: Oogonia and Antheridia from badly diseased leaves of Potato after a week's maceration in water, enlarged 400 diameters.

"How this came about is now pretty generally known. Mr. Murray exhibited some specimens of Potato-leaves badly diseased before the Scientific Committee of the Royal Horticultural Society. In the corroded spots of those leaves Mr. Berkeley's sharp eye detected dark-brown warted bodies (but no mycelium), which he referred to the genus *Protomyces*. Assuming these bodies to be the true resting-spores, which they doubtlessly are, they were necessarily free, as the coat of cellulose disengages them from the mycelial threads. But some similarly spotted leaves had been previously sent to me, upon which I detected the old Potato-fungus mycelial threads within the leaves, and some circular transparent bodies of two sizes, new to me. In attempting to wash these circular bodies out of the leaves and stems, by maceration in water, I found that the moisture greatly accelerated the growth of the mycelium, and that the long-sought-for oogonium and antheridium was at length the result. These bodies were at first most sparingly produced, so that for many days, and after most careful searching, I could only find one or two. Afterwards I found them more abundantly in different stages of maturity, especially in the very putrid stems and in the tubers when in the last stage of decomposition. Mr. Berkeley afterwards found them with abundant mycelium. . . . It is quite possible that the condition of the Potato, as seen during the present season, is quite exceptional, and that it may not occur again for a long series of years.

"In fig. 1, which is an exact copy of the first sketch taken, the oogonia and antheridia

are seen in the substance of the lamina of the leaf, the two bodies being in contact at H J. In fig. 2 many more of the same bodies are shown: some in actual contact; the two upper figures, K and L, show the resting-spores some time after fertilisation, when a coat of cellu-

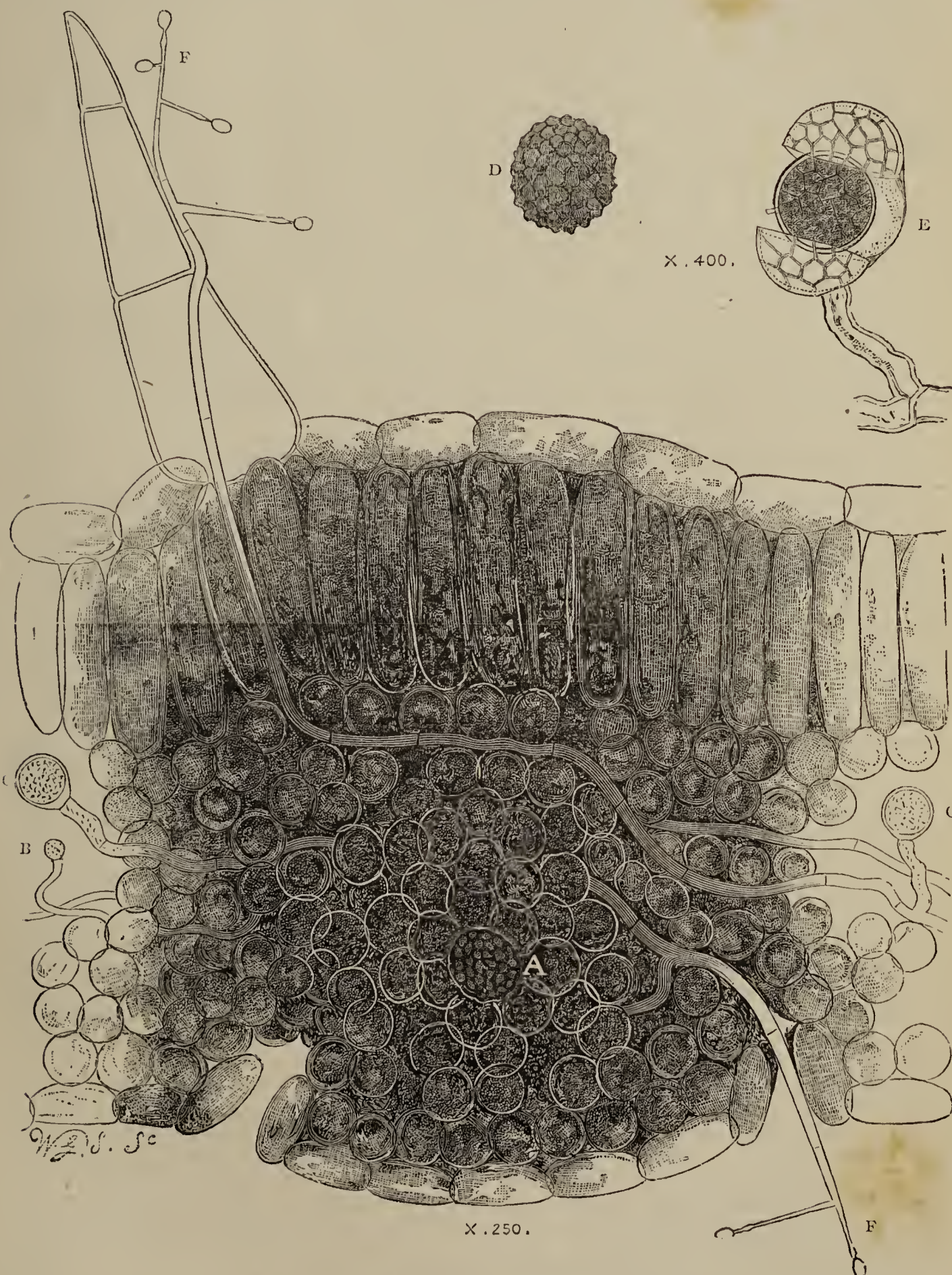


FIG. 3.—*PERONOSPORA INFESTANS*: The Resting-Spore (A) embedded amongst the Leaf-Cells, enlarged 250 diameters; Semi-mature resting-spore (E), mature ditto (D), enlarged 400 diameters.

lose is the result. In K the spore is surrounded by this coat, whilst at L the spore is accidentally washed out by maceration in water. The semi-mature resting-spores, as shown at M M, are furnished with a dark coat or skin; this coat, when further maturity is reached, clearly

resolves itself into two layers, the inner one being termed the endospore, and the outer, which in *Peronospora infestans* is almost black in colour and strongly warted, the exospore. The latter resembles in outward aspect, instead of one spore, a dense concreted mass of minute brown-black bodies. The antheridia are shown at N N. The perfected resting-spores are slightly egg-shaped, and on an average are one-thousandth of an inch in diameter. The oosphere is fertilised by the contact of the antheridium; when the two bodies accidentally touch, the latter fixes a small branch or tube, called a pollinodium or fecundating tube, into the wall of the oogonium, and discharges part of its contents into the protoplasm of the infant resting-spore; when these latter are mature the mycelial threads soon vanish, and the spores are free. When I read my notes before the Royal Horticultural Society I had not been able to detect this fecundating tube, but since then I have seen it.

"After the Potato plant has been badly attacked and destroyed by the fungus, every part of the plant and its parasite perishes, except the dark brown warted resting-spores just described, and these find their way into the earth and hibernate. When they awake to renewed life in the summer they must germinate in the damp earth, and if no Potato plants are near they perish, as the earth cannot support them. In this they are not unlike the seeds of germinating Doddor, for if they cannot find a proper host they die. But if Potato plants happen to be near the corrosive mycelium, it at once penetrates and enters the tuber or haulm. The tuber cannot produce simple or swarm-spores if buried, but in the haulms the mycelium doubtless soon grows and produces both these forms of fruit. These are at once carried by the air into the breathing-pores, and the whole history of the fungus here described is re-enacted."

Since the foregoing remarks were published, Mr. Smith has given an account of his further observations in the journal already quoted (1875, ii., 101):—

"I now give in conclusion an illustration of the perfectly mature resting-spore of *Peronospora infestans*, as seen imbedded in the substance of the Potato leaf. These resting-spores, which carry on the winter life of the fungus, are not restricted to the leaves, for I find them sparingly in both haulm and tuber, although I have at present seen the best specimens in the leaves. Fig. 3 shows a transverse section through a black spot of one of the leaves from Chiswick; the resting-spore is there seen at A, nestling in amongst the cells of the leaf. An antheridium, B, and two oogonia (C, C) from which such resting-spores arise, may be seen, and the old common form of the fungus will be noticed breaking through a hair on the upper surface of the leaf, which is a very uncommon occurrence. The situation of the resting-spores can generally be ascertained on the leaves by noticing the slightly thickened and very dark spots, for the bodies are commonly in these spots. It is, however, an extremely doubtful matter either to get them out, or, indeed, to see them when imbedded, for, when mature, they are black-brown in colour, and only a little larger in size than the leaf-cells. These leaf-cells are also intense brown-black in colour from contact with the hurtful mycelium, and almost as hard as wood. The best way to see the resting-spores is to macerate the leaves for several days in water, and then, by crushing the spot between two slips of glass, to set them free. The presence of the fungus in the leaf makes the cells very thick and woody as well as black, so that in crushing the leaf-cells the resting-spore is not uncommonly crushed at the same time. With care, however, they can be got at, when they will be seen, as at D, covered with warts or coarse reticulations, and beautifully regular and perfect in outline; when young they are of a pure warm sienna-colour, and when perfectly mature, brown-black and shining. They are spherical, or slightly egg-shaped, and measure on an average about one-thousandth of an inch in diameter. At E is shown a semi-mature resting-spore with pollinodium attached, accidentally half washed out of its coating of cellulose by maceration in water.

"There is a marked analogy in size and habit on the one hand between the oogonia and the swarm-spores, and on the other hand between the simple-spores and the antheridia. I consider that the oogonia and antheridia are merely the intercellular condition of the swarm-spores and conidia, which latter are the aerial state of the former. The facts which point in this direction are these:—Sometimes there is no differentiation in the contents of the swarm-spores, but the plasma is discharged in one mass, and not in the zoospore condition; the swarm-spore then resembles the oogonium. At other times the oogonium shows a distinct differentiation in its contents, and matures from one to three resting-spores, which to me shows an approach to the condition of the swarm-spore."

In his first paper referred to above, Mr. Smith remarks that he is disposed to think that the fungus which produces the Potato disease is aquatic in one stage of its existence, and in this stage the resting-spores are formed; and he adds:—
"The reason these resting-spores have evaded previous search is that no one has

thought of finding them amongst leaves which had been macerated for a long period in water. There is, however, nothing unreasonable in fruit being perfected in water or very damp places, as it is common in the *Saprolegnieæ* and amongst *Algæ* in general."

We are very pleased to be able to add that the Council of the Royal Horticultural Society, now purged of most of its non-horticultural atoms, duly appreciating the importance of this discovery, has voted to Mr. Smith the Society's Gold Knightian Medal, "for the skill and diligence displayed in the discovery of the resting-spore of *Peronospora infestans* in the tuber of the Potato."—T. MOORE.

HINTS ON AMARYLLIS-CULTURE.

MOST people really abuse the Amaryllis, or more properly speaking, the Hippeastrum section of Amaryllis. They grow and flower them in a way, but it is often not the best way, and when they have done flowering and made a growth they stow them away under the stage, leaving them very much to chance. That to my mind is a very indifferent way of getting the most out of the bulb. To grow them well they must have a proper season of growth, and even when they are ripening their leaves, they must not be allowed to do so prematurely; nor must a colony of thrips and red-spider be allowed to play havoc with them. The cleaner the bulbs are grown and finished the better their condition, and consequently the greater return will there be in flowers, and good flowers too. The scape ought to be strong and stiff, of a somewhat glaucous hue, and carrying flowers that stand out prominently at right angles, either in pairs, or fours, or sixes, as the prolific character of the variety turns up. Indeed, it takes as much care and culture to grow *Hippeastrums* well as to grow any other description of plant, only it will take a great deal more bad usage to kill them than most of their compeers; and hence they are treated as the serfs of plant life.

A collection of these plants is about the most captivating thing that an amateur could wish for, and we may therefore bespeak for them more generous attention.—JAMES ANDERSON, *Meadow Bank Nursery, Uddingstone, N.B.*

EARLY PEACHES AND NECTARINES.

THE *Early Beatrice* Peach ripened its fruit with me this year on the 10th of July, four days earlier than last year. This was on a glass-covered wall, with no artificial heat except a little in March when the blossoms were expanding. This variety with me always ripens a week before the *Early Rivers* and *Early Louise*, but is not so large nor so good-flavoured as these varieties. Still the *Early Beatrice* is a valuable acquisition for its earliness and fine colour in a collection of dessert fruit. If our veteran Pomologist, Mr. Rivers, had never raised any other seedling fruits than these varieties of early Peaches, they would have immortalised his name, for they will yet turn out to be the fore-runners of a new race, by crossing them with some of the larger mid-season Peaches,

and then seedlings with fruit of a larger size, and with their early habits, may be obtained. I have tried this with the *Early Beatrice* this spring, fertilising it with the Dagmar Peach, another fine large high-coloured sort of Mr. Rivers's raising.

There has been little advance yet in raising seedling Nectarines of earlier-ripening habits, Mr. Rivers's *Lord Napier* being the only large kind; but it is generally the middle of August before it ripens. *Fairchild's Early Newington* and *Hunt's Tawny* ripen with me in the beginning of August, but they produce very small fruit, and the *Tawny* is very liable to mildew. To prolong the Nectarine season some earlier-ripening varieties are much wanted, for there are plenty of mid-season and late sorts now grown. *Albert Victor*, *Prince of Wales*, and *Victoria* are very excellent late kinds, which prolong the Nectarine season till the end of October on the open walls. The *Victoria*, however, having some of the Stanwick Nectarine blood in it, requires a warm autumn to ripen well out of doors. When forced, it is the largest of Nectarines, and has a peculiarly rich flavour when well grown and coloured.—WILLIAM TILLERY, *Welbeck*.

TOADS AND THE GOOSEBERRY-GRUB.*

IN the year 1848, Mr. Leadbitter, of Gray's Inn Road, sent me a circumstantial account of the doings of a Toad *in re* Gooseberry-grub, an account that riveted my attention at the time, and the impression of which remains sharp and clear on my memory. The facts of the case here narrated by Mr. Leadbitter have been abundantly verified by subsequent observations of my own. This gentleman was staying near Dorking, and observed that three or four currant-bushes nailed against a garden wall were stripped of their leaves by these ubiquitous garden pests, which were swarming all over the bare twigs and clinging to stumps of the leaf-stalks. Squatting on the bare earth, in the angle of the garden wall, was a corpulent toad, waiting for "something to turn up," or perhaps, speaking by the card, for "something to come down." The "happy thought" occurred to Mr. Leadbitter that this "something" must be a gooseberry-grub, so he collected a quantity of the grubs, induced one of them to crawl on the end of a short stick, and presented the grub to the toad. After a very short pause, the grub began to crawl up the stick. Then there was a movement of the toad's head and neck, and in an instant the grub was gone—he had descended alive into a living tomb, the stomach of the toad. The naturalist then continued to supply the toad with this living diet until his collection of grubs was exhausted. On the following afternoon, and so on day after day, Mr. Leadbitter and the toad repaired to the same feeding-place, until no more grubs could be found, when the toad returned no more.

The process of eating is this:—The tongue of the toad is thrown forward so as to touch the grub, and then as quickly withdrawn—the grub adhering to its

* Abridged from the *Field*.

extremity, and so swallowed. The whole process is inconceivably rapid, so much so, indeed, that only a practised observer would be aware of what had taken place. Being induced to pay great attention to the feeding of toads by what I had read, I believe I can positively assert that these most useful reptiles always require living food, and always wait for the object, be it what it may, to move before seizing it. I have never been able to induce a toad to seize a dead grub, or a dead fly, or motionless food of any kind, so that I feel very sceptical as to the truth of those amusing anecdotes of feeding tame toads on bread and milk, and other succulent preparations. I have never found any remedy for the ravages of the gooseberry-grub. I utterly repudiate as worthless all chemical preparations of any kind, except whitewash. I cannot, indeed, doubt the efficacy of whitewash, but I question whether the cure is not worse than the disease. Then the toad remedy has its difficulties, but these are not insuperable. If you collect toads in a walled garden, they must of necessity remain there for a time; if you shake the gooseberry-bushes of an evening the grubs must needs fall, and the toads will be sure to devour them.

The gooseberry-grub always enters the ground before it can undergo its transformation. If the earth beneath the gooseberry-bush be trampled hard, it is difficult for the grubs to force their way beneath the surface, and therefore they wander about, exposed to birds by day and toads by night; thousands also fall a prey to carnivorous ground-beetles, which seem to subsist entirely on night-walking worms and caterpillars. There is little doubt that the hardening of the surface-soil sometimes interferes with the free growth of plants; but as rapid and luxuriant growth is antagonistic to fruit-bearing, this hardening, by preventing too luxuriant growth, is likely to be beneficial rather than injurious. I think we are all too much inclined to make gardening laws of too general application; and because the lightest possible surface is desirable in the cultivation of tender annuals, to argue it must also promote the fruit-bearing of gooseberry and currant-bushes—which reasoning does not hold good.

Nature has created at least *one* insect enemy of the gooseberry-grub, a species of *Chrysopa*, called the lace-wing fly or aphis-lion. This enemy is very beautiful, but of very disagreeable scent; it has four wings of exactly similar size and character, delicately reticulated like gauze, a green body and head, and two brilliant golden eyes. So far it is a loveable and an attractive creature; but when you touch it, it emits such an insufferably disgusting smell, that you are glad to get rid of it, and literally to wash your hands of so offensive a creature. This fly hovers lazily about the currant or gooseberry-bushes wherever she observes the parent flies laying their eggs. After a short survey, she selects a particular leaf, the veins of which, so prominent on the under-side, have just been beaded with the oblong eggs of the gooseberry-grub; then, feeling perfectly satisfied that there is abundant promise of provender for her future family, she proceeds to the very edge of the leaf, and discharging a drop of glue, lifts up her body, and the glue, being pulled out to the length of half an inch or more, is thus formed into a

thread, which immediately hardens and becomes a stiff and permanent bristle ; at the extremity of this she affixes an egg, and then repeats the process, until there are six or eight of these eggs standing side by side, each on the tip of a long bristle. The little grub in due time breaks its eggshell, and emerges from its prison-house in the form of a very minute lizard, with six legs instead of four, a distinct head and neck, and a pair of curved and sharp-pointed jaws ; these jaws, although wide apart at the base, yet by means of their curved form meet at the tips, and thus constitute a pair of most formidable and effective pincers for worrying the little gooseberry-grubs, which make their first appearance about the same time. Then follows a repetition of the old story of the young wolf-cubs and the lambs—at first all is serenity, a state of peace ; but both very soon get hungry, and then the grubs devour the gooseberry-leaves, and the lizard-like larvæ of the lace-wings devour the grubs.

My tale is utilitarian. If you would protect your Gooseberry and Currants from the grub, first bring toads into your garden ; secondly, tread the earth hard under the bushes ; and thirdly, never kill a lace-wing fly.—EDWARD NEWMAN, *York Grove, Peckham.*

ALPINE AURICULAS.

WHAT is the dividing-line between a Self and an Alpine Auricula ? I think it would be very difficult to set it forth from a botanical point of view, but the Auricula fancier (and that his species may propagate itself rapidly, is my earnest aspiration) has his line of difference set forth clearly enough to answer his purpose, and mere botanical distinctions, as such, trouble him not at all. The Self Auricula must have its body-colour or marginal colour extending from the circumference of the paste to that of the pip, and there must be no ascending or descending scale of perceptible shade. That the absence of shade indicates the presence of quality, is antithetically true, all other properties being equal. In the Alpine Auricula the opposite prevails, for the leading property—some term it the first property—is the shaded petal, a dark colour paling off to a lighter one, and the more richly shaded the body-colour is the better. Then, whether the centre be white or cream-white, or yellow or custard-yellow, it must be entirely free from that meal or paste so much prized in the Show varieties, and which must be present in a true Self Auricula. The two cannot be botanically separated, when one comes to consider it, for seed saved from true Alpine Auriculas—true in the florists' acceptance of the term—will throw decided Self Auriculas with the unshaded body-colour and mealy centre. More than that: the Rev. F. D. Horner informed me some time since, that seed saved from the choicest edged varieties will produce true Alpines, notwithstanding not an Alpine flower had been suffered to come near them at the time of blooming.

In the report of the recent Exhibition of the National Auricula Society, held at Manchester in April last, which appeared in the *Gardeners' Chronicle*, it was

incorrectly stated that yellow-centred Alpines, when exhibited, must have shaded, and white-centred flowers unshaded margins. This was an error of my own, which I take this opportunity of rectifying. All Alpines must have shaded margins, to entitle them to a place on the Exhibition-table.

Another point with Auricula fanciers is, that the most valuable centre for an Alpine is a clear golden one, and that the nearer they approach the white centre so does their value decrease. Bear in mind, I am treating now of the Alpine Auricula as represented on the Exhibition-table. Some of Mr. Turner's finest seedlings have golden centres, and margins destitute of shade; and while John Hepworth and Ben Simonite would pass them by, as lacking certain requisite qualities, they will always have a high-class decorative value, and be in constant demand. Mr. Turner has deservedly received several First-class Certificates at the London Exhibitions for Alpine Auriculas, but some of these fine old Northern growers would turn from them with a gesture of contempt, because they failed to answer to their estimate of properties. Let us, who take wider views of floral beauty, bear with them. We owe much to these stern, unbending floral Conservatives. Their code, hard and fast as some of its lines appear to be, preserves to us types of sweet and exalted beauty, in which form and symmetry and a due correspondence of parts are clearly discernible, as well as the true artistic excellence which constitutes high-class quality.

From this stand-point, if a flower have an unshaded petal, it ought to have a densely-mealed centre, and be a Self; if it have a shaded petal, it ought to have a mealless yellow or white centre, and be an Alpine. Therefore, from a strict florist's point of view, a flower is a veritable nondescript, or what some have termed a hybrid, which is not true in fact, if it have an unshaded petal with an alpine centre, mealless yellow or white, or a shaded or alpine petal, with the white mealed paste of the Self Auricula proper. The Rev. F. D. Horner, the high priest of the laws and ceremonies of Northern floriculture, puts the case strongly, but yet truthfully, from his point of view when he states: "A few grains of meal even on an Alpine flower are so much against it. Some of Turner's fine yellow centres are all but self-coloured on the petals, and therefore make but weak Alpines."

Of the Alpine Auriculas shown at the National Auricula Exhibition at Manchester, the premier flower in the yellow-centred class was Turner's Bessie Ray, a beautiful new variety, the shaded maroon body-colour being margined with very bright pale orange-red, which was well displayed, the pip flat, rounded, and of great substance. Then in the order of quality came Turner's Nimrod; Turner's Ovid, Alice, Diadem, Dolly Varden; Turner's Bronze Queen, Turner's John Leech, and Turner's Evening Star. Of the white-centred flowers, the best was Mauve Queen, with a broad pale mauve margin, paling off to a charming delicate lilac edge; George Lightbody, velvet, shading off to red; Miss Read, Beatrice, Constance, Purple Emperor, and Consolation.—
R. DEAN, *Ealing*.

GARDEN WORK FOR AUGUST.

FLOWERS.

FLOWER-GARDENS will now be at their best. To render this flush of gaiety as lasting and satisfactory as possible, strict attention must be given to maintaining good order and keeping, removing decaying blossoms, and preserving clearly-defined outlines, as any intermixture of pattern or any badly-defined lines of edging are most objectionable. Amongst foliage plants the *Golden Feather* and the charmingly-pretty *Stellaria* require weekly attention to preserve perfect neatness. The turf must be kept fresh during dry weather by frequent waterings, as a smooth verdant groundwork is essential to general effect. Continue to propagate perennial and biennial plants. The present is a good time to propagate *Alyssum saxatile* and its varieties, *Iberis corifolia* and *I. gibraltarica*, in light sandy soil under the shade of a wall, in a hand-light or frame. That noble plant, the *Rocket*, having been cut down after flowering, should now be divided, as it is making fresh growth from the crowns. That favourite spring-blooming plant, *Myosotis dissitiflora*, should be divided into small portions, and these planted 6 in. or 8 in. apart; seedlings of the *Myosotis* and of the *Wallflower* should be transplanted. As success in forcing *Violets* greatly depends upon the vigour and maturity of their previous growth they must have every attention in watering, which tends to keep spider back, during dry weather, the runners being cut back as they advance.

Roses: Finish budding, and encourage perpetuals to make vigorous growth, so as to induce late blooms. Propagate from cuttings all kinds of *Roses*, and whatever the variety, when taken thus early, they should have the protection of a frame; *Teas*, *Noisettes*, and *Chinas* do best with the addition of a slight bottom-heat.

Conservatory: Amongst plants in flower at the present time is the deliciously-scented *Tuberose*, so powerful in its fragrance that one is forcibly reminded of its presence upon entering a house containing it. It is of the easiest culture, but is so seldom met with that many gardeners do not even know it by sight. That most effective plant, the *Tritonia*, is doing good service at present, the conspicuous *T. Brilliant* and *T. crocata* producing their light and graceful spikes of bloom in the greatest profusion. *Statice Holfordi* is a most desirable plant for conservatory embellishment at this season, on account of its standing so long in bloom. *Crinum amabile* stands well in conservatories at this time of the year, and from its effective inflorescence and delicious fragrance, it is deserving of more extensive cultivation. The different varieties of *Begonia* are also most effective in these structures, when in bloom, if kept free from the attacks of insects.

Stoves: All plants that are maturing growth should be more exposed to air, with less shade, and less water at the root, fire-heat being dispensed with during hot tropical weather by shutting up early. At the same time, sudden transitions should always be avoided. Such plants as *Bougainvilleas*, *Clerodendrons*, *Gardenias*, *Ixoras*, &c., which have finished blooming, should be encouraged to make vigorous growth in a brisk temperature, with frequent applications of manure-water. Thin and shorten the shoots of *Stephanotis* after blooming, whether upon trellis or roof, as on this being done they make more free and perfect growth than if left in dense masses. *Poinsettias* should now have an abundance of air to prevent drawing, and such as are well established should be fully exposed upon every favourable occasion; *Euphorbias* must also be fully exposed to light, and kept close to the glass.

Greenhouse: The majority of plants that made early growth should now be out of doors in a somewhat shady situation, and careful attention must be given to watering them. *Succulents* ripen their wood far better in a full exposure than under glass. The *Crassulas*, if well grown, are amongst the most effective of flowering plants; and if propagated now, they grow freely through the winter months, making good foundations. *Amaryllises* that have completed their growth should now be kept moderately dry at the root, and induced to ripen their foliage with abundance of light and air. *Fuchsias* require encouragement with liberal applications of manure-water. Cuttings should now be struck for winter growth. *Pelargoniums* should be cut down without delay to two or three eyes, the plants placed in a cold pit or frame, and watered moderately, abundance of air being given to induce them to break strongly. Cuttings of the best sorts may be taken at the same time. Plants that have been cut down early and are broken out an inch or so should have fresh soil, and be put into the smallest pots, which will contain the roots conveniently after their being reduced. They should be then placed in a frame, syringed twice daily, and shaded from bright sun until established, when air may be freely given. *Camellias* should now be grafted, and the single red propagated for stocks. Of *Cinerarias* the earliest batch should be shifted into a free open compost, in 6-in. or 7-in. pots, for flowering. They delight in a cool moist situation, shaded from the meridian sun, and in being kept free from insects. The lights may be removed during mild nights.

Bedding Plants: Attention must now be turned to the propagation of these for next season, keeping in view premeditated alterations, so as to be sure of securing proper quantities. *Pelargoniums* will do best with full exposure to the glare of the sun. *Mignonette* should now be sown in pots to flower during winter. *Ten-week* and *Intermediate Stocks* should also be sown in pots to serve for spring decoration.—GEO. WESTLAND, *Witley Court*.

FRUITS.

Pines: Shift the young stock as they may require it. All plants intended for fruiting next summer should be potted during this month, using free turfy loam, from an old pasture, mixed with a little cow or pig-manure. All Pines will now require more water, and liquid manure should be given occasionally. Use the syringe freely at closing time to all except those bearing ripe fruit. Those planted out on ridges will require plenty of water, growth being encouraged by keeping a moist atmosphere; close early in the afternoon at a temperature of about 90° by sun-heat.

Vinery: Keep the houses containing ripe grapes well aired, and free from moisture, looking over the fruit occasionally, and removing any decayed or unhealthy berries that may appear on the bunches. Remove the sashes as soon as the crop is cleared, if the wood is ripened and the leaves are beginning to decay. Maintain a moist-growing heat in the *late* houses till the fruit begins to colour, and assist the Vines with a little fire-heat if the nights are chilly, more especially in the case of late Muscats. If mildew appears dust the whole with sulphur, and keep the house a little warmer and dry for a few days. It can be easily washed off again with the syringe when the mildew has disappeared. Those Vines in pots which are intended for fruiting next season should have a liberal supply of liquid manure; stop the leading shoots as soon as they are the desired length, and cut out all lateral shoots as the wood ripens.

Peach-house: If the wood is ripe in any of the houses where the crop has been cleared, and the weather is warm, the sashes may be removed altogether.

Go over the trees in the late houses, as soon as the fruit is gathered ; and cut out all useless shoots, such as are not required for next season. Wash the trees, and water the borders if dry.

Melons : The late crops of Melons will require plenty of air and water, while the fruit is swelling ; and in hot weather the light should be drawn off altogether, closing the frames again at night. If wood-lice are troublesome in the frames, it is a good plan to place the fruit on bricks over a pan of water. Keep the shoots stopped above the fruit, and cut away all useless shoots, so that they do not get matted together. Withhold water where the fruit is ripening.

Strawberries in Pots : Continue to layer runners for forcing, and as soon as any are well rooted, pot them at once for early work ; use a free porous loam mixed with a little rotten manure ; place the plants after they are potted in a fully exposed situation, where they will have the full benefit of air and light, and surface the ground with coal ashes or lime to prevent worms entering the pots. The following varieties are among the best for main crop—*Sir C. Napier*, *La Grosse Sucrée*, *President*, and *James Veitch* ; the latter is a fine large showy fruit of the Cockscomb type, but a fortnight earlier than that variety.

Hardy Fruits : We will suppose that by this time the thinning, stopping, and nailing-in of the young growth of all *Wall trees* is finished. The advancing crop of *Peaches* and *Nectarines* should be seen to, and the trees carefully gone over to remove any nails that are likely to come in contact with the fruits ; at the same time, remove a portion of the leaves where the fruit is too much shaded. Look out for snails ; and trap earwigs on their first appearance ; perhaps the simplest way to rid the trees of them is to place short pieces of bean-stalk, or any other hollow tubes, in different parts of the trees, looking them over every morning, blowing the contents into a bottle, and replacing the tubes. If the weather be hot and dry before the crop ripens, mulch the borders with rotten manure, and give a thorough soaking of water ; keep the trees syringed in the evening, until the fruit is near maturity. Protect fruit intended for *late* use, such as *Cherries*, *Plums*, &c., with nets, or light canvas ; and mat up *Currants* and *Gooseberries*. Cut away the runners from *Strawberry*-beds as soon as the crop is gathered, and stir the soil about the plants to encourage them before the growing season is past. Layer runners for new plantations, and plant them out as soon as they are well rooted.

Orchard-house : If any of the trees growing in pots are clear of their crop, they should be removed, and plunged outside ; do not forget them, but keep them well syringed and watered. Well soak the roots of trees in fruit and approaching maturity, for at no time should they be allowed to get dry.—J. POWELL, *Frogmore*.

VEGETABLES.

We are again warned by many signs of the approach of another winter, and hence, as the comfort and success of the gardener are increased according to future needs and demands, it will be necessary now to look forward and prepare for all eventualities. To secure winter crops of given kinds of vegetables, it is requisite to sow them at certain periods, which must be well studied. Early in the month, prepare beds for *Spinach* (Prickly-seeded) ; this plant delights in rich soil, open and unshaded from the sun ; by a rich soil, we mean a soil enriched previously by manure in a wholesome and thoroughly decomposed state, rather than one freely charged with such as is rank and unwholesome. The ground should be prepared ready for sowing (thinly in drills) as early as August 11, in the case of all cold districts, and especially upon harsh, ungenial soils ; but in warm localities,



J. L. Macfarlane, del.

Chromo. G. Severeys Brussels.

Dr. Hogg Peach.

and upon dry open soils, it will suffice to sow on the 15th. This is for the main winter crop, but we may add that it often more than repays the trouble to make one or more duplicate sowings of moderate extent within a few days of these dates. As soon as the plants are well through the ground, take advantage of a fine day to thin the rows where needed, and to hoe the surfaces freely amongst them. Sow also as near to the above dates as possible some kind of *Tripoli Onion*, of which the Giant Rocca is the largest and best; sow the seeds moderately thin, and in such a position that they can be permitted to remain through the winter without being disturbed.

Finish the transplanting of *Celery*, *Borecole*, *Broccoli*, and all such crops, as soon as any ground previously occupied becomes vacant. Make all the advance possible with the earthing-up of *Celery*, taking care not to pack too much soil up at any one earthing-up, and especially not to place it in too large spitfuls, and pressed together too heavily or firmly up to and against the plants. Transplant at this time good breadths of *Endive* and *Lettuce*, as the time is now past when they bolt so readily and numerously; those that are now transplanted may be used eventually for storing away into cool frames, or other similar sites for a winter supply. Make successional sowings of *Radishes*, *Endive*, *Lettuce*, and a small sowing of *Cabbages* as needed, during the latter end of the month where practicable upon warm sunny borders. *Cauliflowers* for the spring supply and for winter growing in frames, &c., should be sown some time between the 20th and 26th of the month; sow them upon a warm sunny border, and so that they may form strong dwarf plants for transplanting into frames, &c., so soon as the nights get long and cold.—WILLIAM EARLEY, *Valentines*.

THE DR. HOGG PEACH.

WITH AN ILLUSTRATION.

THE specimens from which the accompanying drawing was made were obligingly communicated to us last season, by the Rev. W. F. Radclyffe, by whom they were grown. As will be seen from the illustration, it is a very handsome, high-coloured fruit, likely to take a high place on the exhibition-table, as well as in the garden and forcing-house. The following is the description of this variety in the new edition of Hogg's *Fruit Manual*:—

“Fruit large and round, with a very distinct suture, which is deeply cleft at the apex. Skin thin, but tough, lemon-coloured, dotted with crimson on the shaded side, and with a faint crimson cheek next the sun. Flesh yellowish-white, somewhat firm, but melting, with a rich, full, sugary flavour, which adheres to the palate, notwithstanding its fine briskness; it is very deeply stained with red at the stone, from which it separates freely. Flowers large. Leaves with kidney-shaped glands.

“This ripens about the 10th of August, and is a very large early Peach. As an exhibition variety, it will be in high repute, on account of its size and remarkably full flavour; and for market purposes, its earliness, size, and the ease with which it bears carriage, will render it one of the most valuable peaches in cultivation. The tree is a very strong grower, remarkably vigorous and healthy, and it bears immensely.

“It was raised by Mr. Rivers, from a French peach he received from

Brittany, under the name of *Pêche Deniaux*; and first fruited in 1865.”—
T. MOORE.

GOOSEBERRIES AND CURRANTS AT CHRISTMAS.

HERE seems to be in our very natures a longing after fruit. Eve had it, when she set her heart upon that which was forbidden. The child with the layer of jam on his bread, and the tart of some pretensions in pastry, with a crown of leaves on its head, and having its edges milled like the gold and silver coin of the realm, both attest the usefulness of fresh fruit, which is so much superior to dried currants and raisins. In order to lengthen out the season of fresh fruit for rich families costly structures of glass are erected, some to force, and some to retard. Hence we see fresh grapes hanging on the Vine at Christmas, and even later, retarded by the skill of the cultivator; and on the other hand, we see ripe Grapes in April forced, so as to keep up a supply of this delicious dessert fruit for nearly or quite every month in the year.

Passing over the culture of exotic fruits, let us consider what can be done with hardy fruit-bearing shrubs, and chiefly with Currant and Gooseberry bushes, so as to retard the fruit beyond its natural season; for many gardeners, by means of very simple appliances, have gathered a dish of Gooseberries fresh from the bushes at Christmas. It is, moreover, a safe way for beginners to try their skill in keeping fruit, by experimenting on cheap kinds, which are hardy and sure croppers. I have constantly had some Gooseberry bushes covered with a kind of pent-house, made of two plain wooden shutters set up like the letter A, and lighted at the sides with cheese-cloth. This wooden roof kept off the rain from the fruit and the foliage, and from the roots as well; for it must be remembered that if the soil gets wet the water will get into the system and spoil the flavour of the fruit. There is no plant more sensitive of wet at the root than the Gooseberry, for even in summer-time the berries will sour and burst in wet weather. A cool, dry atmosphere is therefore an essential element in preserving fresh fruit. In Lancashire the Gooseberry is treated somewhat differently from what it is in most places. The prize-grower astonishes his fraternity with the size of his berry, but says nothing about the very few berries which he allows the plant to carry; whereas in a family garden the bushes are usually of large size, and the fruit small, but plentiful.

When orchard-houses became fashionable, small-sized fruit trees, peaches, plums, &c., were duly potted and grown under glass, but until this was done it would have been presumption to propose putting a gooseberry or currant bush into a flower-pot. It is very strange that so few professed gardeners grow prize Gooseberries. Mr. Barnes, of Bicton, grew young plants after the Lancashire fashion to get first-class fruit, and he gave battle to the caterpillar after his own fashion—a kind of persecution, for he followed the enemy into the earth, and would not let him live in the chrysalis state, or in any other, for his deep trenching and transplanting no doubt buried numbers never to rise again. Healthy young

trees transplanted every year, with plenty of roots are the "stock" in this "trade," but I cannot follow the fancy into all the details and secrets of the craft. Some of the largest-sized Gooseberries I have ever seen were grown by an amateur at Birmingham, and after planting in rich prepared compost, these were watered with soap-suds. It is this style of culture that I would now recommend,—viz., growing such young plants only, but instead of growing them in the open ground to grow them in pots, so as to be able to house the bush when the berries are ripe, instead of carrying a penthouse to the garden, as I have mentioned. Any light room not having draughts or exposed to wind will do to keep these pot-plants in, and they must not be watered, although they may be plunged in any moist medium like old tan.

Of course, a glass-house, or an orchard-house, would be best, but I am not elevating the Currant and Gooseberry to that level, but would fain give the small amateur a chance of showing what the fancy can do, by not only growing large berries, but preserving them for the great festival of Christmas, when they would be appreciated. It has long been the fashion in the north to grow Gooseberries and Currants on low walls, sometimes to get the fruit early, and sometimes to get it late, on walls facing the north, and east, and west, and matting them up; but after all, the flower-pot is a simpler plan, and more systematic than the penthouse and the wall. Still, how many idle walls do we see that might be adorned with such useful fruits as the Currant and Gooseberry. I have elsewhere stated how garden walks may be arched over, and "long-drawn aisles" of fruit-trees and shrubs made to adorn our cottage homes, as well as the homes that have more pretensions to horticulture.—A. FORSYTH, *Salford*.

THE PERENNIAL CHEIRANTHUS.

THE genus *Cheiranthus* supplies us with some invaluable hardy spring flowering plants, which are very useful for decoration at that season. But I do not now intend to deal with the ordinary biennial Wall-flower. I wish to bring before the readers of the FLORIST AND POMOLOGIST the claims of such perennial forms as *C. ochroleucus*, *C. Marshallii*, and *C. Dillenianus*.

All three have a dwarf close habit of growth, the most common being *C. ochroleucus*, which, when it is allowed to establish itself, makes a dense low clump, and flowers with wonderful profusion during the early summer. It should find a place in every mixed border, and in the rock garden. It is a vigorous grower, and can be readily propagated by root-division. The terminal racemes of flowers are of a pale sulphur-yellow colour. *C. Marshallii* is said to be a hybrid between *C. ochroleucus* and the old well-known annual *Erysimum Peroffskianum*. It is less robust in habit than the first of these, and it has become somewhat scarce in gardens. The flowers are of quite a rich hue of golden-orange, and it is very charming when an established clump gets into full bloom. It can be propagated by cuttings, but unless carefully done, this is a somewhat precarious venture. I find the best mode of propagating it to be, to cut away the flower-stems as soon

as they have done flowering, and then pile some good soil about the bases of the branches, or side-shoots. By the end of the summer, they will root into the added soil, and the plants can then be lifted, the rooted side-shoots removed, and planted out to grow into size. *C. Dillenianus* has coppery-buff flowers, and a rather straggling and weakly habit of growth. It can be treated in the way recommended for *C. Marshallii*, but to have it good and clean, it should be grown in pots under glass, and kept in a cold frame.

Last summer, Mr. James Allen, of Shepton Mallet, having to move some plants of *C. Marshallii* just as they were coming into flower, cut away all the flowering-stalks; the consequence was that the plants made a second growth, which flowered towards the end of the summer, and singular to state, some of the seed-pods, which invariably fail to mature themselves on *C. ochroleucus*, in this case produced seeds. The seed was sown as soon as ripe, it speedily germinated, the plants were grown on through the winter and spring seasons, and they are now just beginning to flower. Mr. Allen has just fulfilled a kind promise to give me some account of his seedlings when they bloomed, and I cannot do better than append his remarks, premising at the same time that his experience serves to strengthen the assumption that *C. Marshallii* is a hybrid between *C. ochroleucus* and *Erysimum Peroffskianum*. In a letter just received, Mr. Allen states:—"My *Cheiranthus Marshallii* seedlings are a puzzle to me. Many of them are now showing bloom, and some twenty plants are already open. Most of these are from 18 in. to 24 in. high, and appear to have lost their perennial character, and to be only improved forms of *Erysimum Peroffskianum*, with colours varying from that of *Cheiranthus Marshallii* to that of *E. Peroffskianum*. I noticed one plant had much larger flowers, and stouter, than *C. Marshallii*. Some of the transplanted seedlings as yet unbloomed have the habit of *C. Marshallii*; whilst many others have that of *E. Peroffskianum*. As so very few have, so far, bloomed, I cannot say much about them yet, but I am already convinced I have two distinct classes of plants from one parent. I am hoping to obtain a *Cheiranthus* with the colour of *E. Peroffskianum*, and the habit of *C. Marshallii*, but larger flowers; and also a very much improved strain of *Erysimum*. I think it is very evident that *C. Marshallii* is a hybrid, and my seedlings are 'harking back' to the two parents."—R. DEAN, *Ealing*.

GARDEN GOSSIP.

DURING the month of July *Floral Exhibitions* abound, but the remarkably wet period through which we have passed has been anything but propitious for them. The most important is that of the *Royal Horticultural Society*, on the 21st and 22nd ult., which was the finest exhibition seen in this country since the memorable International Show of 1866. The main portion of the show was furnished gratuitously by the leading nurserymen and plant-growers, and was intended as a demonstration of the vitality of the horticultural element, which had been depreciated and insulted by members of the Council who had recently resigned,—intended also as an encouragement to the purified Council, now in office, to persevere in the difficult task of

righting the Society with the horticultural body, the Royal Commissioners, and the Fellows generally, and of re-establishing it on a sound and enduring basis.—The Show of the *Pelargonium Society*, held in conjunction with the foregoing, was very well supported, many of the finer modern varieties being shown. This young Society deserves encouragement, so that it may include all the races of *Pelargoniums* within its range.—The *Midland Counties Grand Horticultural Exhibition*, which took place at the Lower Grounds, Aston Park, Birmingham (July 1 to 5) was entirely successful as an exhibition, though not financially so, on account of the unfavourable weather. The display of Stove and Greenhouse Flowering Plants was particularly good, as also was that of Cut Roses, Fruits, and Vegetables.—The *Nottingham and Midland Counties Grand Rose Show* (July 8 to 10), for which the weather was very unpropitious, proved a remarkably good exhibition; it took place in the Arboretum, which occupies a considerable extent of rising ground facing the town, and was held under canvas,—the plants and cut flowers being staged in one of Edgington's mammoth marquees, which covered an area of about 30,000 square feet; while two other good-sized tents were devoted, one to fruits and vegetables, and the other to table decorations, bouquets, and such-like elegancies, the adjudication of the prizes amongst which latter class of exhibits was entrusted to a committee of ladies connected with the town and county.

— MESSRS. G. JACKMAN AND SON, of Woking, forwarded to us a short time ago flowers of a *New Double Clematis*, named *Belle of Woking*. It is a variety of A-1 quality, and is referred, along with *C. Fortunei*, one of its parents, to the florida type. The leaves are ternate, with rather small ovate leaflets. The flowers are rather more than 4 in. across, with much the same build and character as *Duchess of Edinburgh*, having about eight rows of sepals, which are obversely lanceolate, acuminate at the apex, and narrowed below into a short stalk-like base, but forming a close rosette about 3 in. in depth. The colour is a decided but charmingly delicate mauve or silver-grey, the innermost sepals having here and there a bar or dash of reddish-lilac, which, however, is scarcely apparent. A small tuft of stamens occupies the centre, the filaments of which are white, and the anthers cream-coloured. The uppermost or bractiform leaves are simple, variously formed, and more or less coloured, as often occurs in these double flowers. It is an exceedingly fine acquisition.

— THE following *New British Ferns*, from Mr. Lowe, were awarded First-class Certificates at the recent great show at Nottingham:—Of *Athyrium Filix-fœmina*: *lineare reflexum*, a strong-growing red-stemmed form of the Pritchardi type; *Kingscotei*, a tall form with tasselled fronds and pinnæ, and having very long narrow pinnules; *eukudes*, a stiff erect tall form, with narrow pyramidal toothed pinnules; *proteoides*, tall and somewhat cruciate, the acute bipinnate pinnæ being biparted at the base; *Du Boulayæ*, a form in the way of tortile, with irregular refracted pinnules. Of *Polystichum angulare*: *plumosissimum*, a form very near Pateyi, with stiff erect fronds, having a broad base, and very plummy, set on in a twisted overlapping manner, and the apex slightly multifid; *Cliftoniæ*, with a narrow cruciate frond, multifid, deflexed at the tip. Of *Lastrea Filix-mas*: *Leckenbyi*, a loose form, with broad unequal pinnules, and the pinnæ often furcate. Of *Scolopendrium vulgare*: *plicatum*, with stiff, short, erect fronds, much undulated and crested; *eulophon*, another stiff, erect, undulated form, spirally crested, and somewhat deflexed at the top; *mirandum*, a narrow bimarginate form, crested at top, the lobes flattened, and scimitar-shaped. Of *Adiantum Capillus-Veneris*: *Cliftoniæ*, a smaller elegant form, resembling the garden glaucophyllum; *polyhymnia*, a stout, erect frond, with largish angulate pinnules. *Adiantum concinnum pendens*, a Fern of elegant drooping habit, from Mr. Lowe; and *Pteris serrulata major cristata*, a tall form not much distributed, with drooping crested segments, from Messrs. R. Edwards & Son, Nuttall, also received First-class Certificates; as did a handsome variegated-leaved Rose from Mr. Lowe, a sport from La Brillante.

— IN a description of Herr Leichtlin's garden recently published in the *Gardeners' Chronicle*, Mr. Elwes mentions the following as the only five known species of *Lilium*, all accessible, which remain to be introduced to our gardens:—

L. nepalense: belonging to the longiflorum group, and found in the Himalayas from Kumaon to Nepal; this plant could be easily procured by many tea-planters or residents in Mussoorie or Almorah. *L. oxypetalum*: a small Fritillaria-like plant, figured in the *Bot. Mag.*, t. 4731; also found in the Himalayas, but ranging more to the north-west, and at higher elevations. *L. medeoloides*: a rather small-flowered and not very showy plant, having the habit

of the Martagons, and erect flowers; found in damp woods of North Japan near Hakodadi, and in the Corean Archipelago. *L. avenaceum*, which has also the leaves and habit of a Martagon, with small spotted pendulous flowers, and a very loose tender bulb, composed of scales which resemble grains of Oats; it is found in North-West Siberia, Kamtschatka, and the Kurile Islands, possibly also in Japan; owing to the delicacy of its bulbs, seed would be the most likely means of introducing it. *L. callosum* of Siebold and Zuccarini, not the *L. callosum* of gardens, which is a distinct plant: the real one is known by its curious double stipular or bracteal appendages. It is found abundantly in the high mountains of Japan, and may possibly be in cultivation already.

— AMONGST the shrubs found adapted for forcing, the *Laburnum* takes a high position, though it is not generally seen grown in this fashion. Mr. Buck, of Castle Ashby Gardens, finds it invaluable in early spring, and his forced plants yield him splendid wreaths of yellow flowers, which are much prized for house decoration. Late in autumn the plants are lifted from the open ground, and the roots thrust into suitable sized pots *sans cérémonie*; but the plants flower well notwithstanding when introduced into heat. After they have done flowering they are planted out in the open ground for the summer, and in the autumn again potted and placed in warmth as stated above. The standard shape seems to be best suited to the purpose.

— SOME *Hybrid Spiræas* of a very interesting character have been sent to us by Mr. Willison of Whitby. *S. palmata* was the female plant, but all, or nearly all, of the progeny have pinnate leaves, differing much among themselves both in size and form. Out of about 100 plants flowering this year, which have bloomed earlier than the parent, the flowers are either white or pinkish. One of the white-flowered forms has the pips so much larger than usual, that Mr. Willison suggests it might be called *grandiflora*. The value of these seedlings as garden plants cannot yet be truly estimated, since their permanent character will scarcely be manifest, but the large-flowered one alluded to, and some of those with the flowers much suffused with pink, may be expected to prove pretty ornaments of our flower borders. They are very light, pleasing, and gay.

— AT the annual exhibition of the *Royal National Tulip Society*, which took place at the Botanic Gardens, Manchester, on May 29, First-class Certificates of Merit were awarded to the following new varieties of Tulips:—*Dr. Hardy's Nimbus*, *Mr. Samuel Barlow's Mrs. Cooper* and *Little Annie*, *Mr. C. Forman's Semima Forman*, and *Mrs. Plackitt*; *Mr. W. Whittaker's seedling rose*, and *Mr. Thomas Haynes's Duke of Edinburgh*. The competition was mainly confined to the northern and midland growers, the flowers of the southern growers having been quite past. The quality of the flowers, it was thought, had never before been exceeded. At the after-dinner meeting of subscribers, it was resolved to hold the exhibition for 1876 at Manchester—probably at the Botanic Garden, Mr. Barlow to act as hon. secretary and treasurer. The sum of £45 was subscribed towards the prize fund for next year.

— PROBABLY the finest *Standard Rhododendron* in the world is one now growing in the Knap Hill Nursery. It has a noble stem bearing a magnificent head, and is of the variety called *Scipio*, a deep rose-coloured flower with conspicuous dark spots. This, we are told, is one of the best of all varieties for standards, as it clothes itself so completely with bold handsome foliage, and is also prolific of flowers. Old plants which have become thin, or any of the sparse-foliaged sorts, might with advantage be grafted with this variety, which on a healthier stem would in this way soon form a vigorous well-furnished head.

— CUT flowers of seedling *Double Deutzias* have been sent to us by Mr. Willison, of Whitby. Being all white, or slightly dashed with pink, there was a considerable sameness in the flowers, but the raiser points out that in habit they differ considerably—some of them not more than a foot or so in height, having upon them from twenty to thirty spikes of flowers. Some of these dwarf free-blooming forms, he thinks, will be found extremely useful for forcing purposes.

— THE *Double Purple Senecio* has recently been mentioned as one of the

most effective bedding plants used in the flower garden at Gunnersbury Park, Acton. The plants are raised from cuttings, not from seeds; and plants so obtained make but a spare growth, and flower with great profusion throughout the summer. It supplies an extremely pleasing and effective hue of colour. This was one of the subjects used for bedding some thirty or forty years ago, and may well take rank amongst neglected subjects of the highest merit. There used to be a very handsome variety with variegated leaves.

— THE *Seville Early Longpod Bean* maintains this season the high character it bore last year when grown for trial at Chiswick. Mr. Barron considers it to be at least four days earlier than the *Early Longpod*—an important consideration with market-gardeners; and the pods are long, broad, and very handsome. It has, moreover, an additional value as an exhibition variety for early shows. Without being a heavy, it is yet a profuse cropper, and the character of the foliage is quite distinct. It is also a Bean that especially deserves cultivation in private gardens.

— THE *Phormium tenax Colensoi* has, we learn, been flowered by Mr. W. E. Gumbleton, at his residence, Belgrove, Queenstown. The plant is blooming in the open air, in a sheltered glen, close to the sea.

— AMONGST the meritorious novelties of the season, *Clematis Willisoni*, from Mr. Willison, of Whitby, may be specially noted. It is a double-flowered variety of the type of *Countess of Lovelace*, though considerably paler in colour, having large guard-sepals, eight in number, resembling those of the ordinary single-flowered sorts, and filled in the centre with a tuft of shorter and smaller sepals replacing the stamens. These smaller sepals, which are somewhat spathulate in figure, with a short acuminate apex, become narrowed at the base into a claw, which is shorter in the lower and about half an inch long in the upper series, the tuft consisting of about five tiers of these petaloid organs. The colour of the guard sepals is a delicate mauve, deepening to a full mauve at the base, as seen when the inner petal-like bodies are removed, these latter being of a delicate mauve-lilac or silver-grey, which is the tone of colour generally evident in the flower. The flowers, which Mr. Willison states are sometimes 8 in. to 10 in. across, and quite full, are intermediate in colour between the bluish *Countess of Lovelace* and the pale lavender-tinted *Belle of Woking*, coming near the hue of *Lady Londesborough* and *Albert Victor*.

— THE *Moniteur Horticole Belge* publishes the following simple mode of *Blanching Endive*:—Plant in very well-prepared soil, at six inches apart, instead of in the usual more open way; when established, enclose each bed with planks eight inches wide, set on edge, to prevent the outer plants spreading. When vigorous growth commences, press the plants close together, and in this way they blanch without further attention, the leaves not being injured as they sometimes are in tying, so that they keep much better in the blanched condition.

— FROM Australia, Baron von Müller has sent over dried specimens of *Correa Lawrenceana*, with flowers as brilliantly red as any of the showiest varieties of *C. speciosa*. *C. Lawrenceana* in its ordinary state has greenish-yellow flowers, and occupies the wet subalpine ranges of Gippsland, towards Capo Otway, and also of many parts of Tasmania, where Mr. Lawrence discovered it nearly forty years ago. It is, moreover, far more hardy than *C. speciosa*, and a far taller bush, attaining a height of 20 ft. and perhaps more, the lustre of the dark green surface of the leaves rendering it a most eligible object for cultivation. Add to this, that it flowers nearly through the year, that the flowers stand generally in clusters, and that now we have a crimson variety, and it will be evident that an important horticultural acquisition has been gained. This, adds Dr. Mueller, "I intend to render accessible to Europe. In my recent journey to Mount Kosciusko from the west (I went to that Mount from the south in 1854) I saw only plants of *C. Lawrenceana* with red flowers, whereas on the southern brooks I saw always only the variety with the greenish flowers. Possibly the plant may prove hardy in Britain, as it ascends here to 4,000 ft."

— MR. WARD, of Longford Castle Gardens, writing of the *Cultivation of Horseradish*, which he maintains does not receive the attention it deserves, describes

his own mode of cultivation as follows:—In March we open a trench 2 ft. wide and 1 ft. deep; this we fill up and raise to the height of 18 in. from the surface with well-decomposed dung and leaves, the whole being trod well together; the line is then put down 6 in. from either side of the ridge, and the whole covered up with soil, thus forming a good ridge 18 in. wide on the top, with the centre 3 in. lower than the sides and ends, thus forming a kind of basin for the water. In planting, we select some straight roots from 9 in. to 12 in. long, which we plant with the setting-stick, in holes 1 ft. deep, and slanting to the interior of the ridge with the crowns 1 in. below the surface. We plant two rows on each side. We make one ridge every year 60 yards long, on which we plant two rows in the way above stated, and are amply rewarded for our trouble with sticks varying from 18 in. to 30 in. long, and from $1\frac{1}{2}$ in. to $2\frac{1}{2}$ in. thick.

— UNDER the title of *High-class Kitchen Gardening* (London: Bradbury and Co.), Mr. Earley has published a handy volume of some 238 pages, in which the cultivation of the various esculents grown in this country is treated of in a brief and thoroughly practical manner, the best sorts to grow, the quantity of seed required, and the whole process of cultivation being noted down. It is an excellent book for young gardeners to study, as they are apt to think vegetable cultivation almost beneath their consideration, whereas it is the foundation of a gardener's reputation; and it is no less useful for amateurs who care to make the best of their garden space. One brief quotation will show the practical bearing of its teachings:—"Always be particular to pick the young pods off immediately they are fit for use. Do this, whether the crop is in demand or not. To permit them to remain but a few hours longer than is necessary is to greatly impoverish the future bearing capacity of the plants." This is said of French Beans, but it is sound advice in the case of all successional bearing plants.

Obituary.

— MR. GUSTAVE ADOLPHE THURET, of Antibes, a botanist of the first rank in the department of sea-weeds, died suddenly in May last. He was an enthusiastic gardener, and his garden was full of interesting plants. He was the first to discover that the spores of certain Algæ—whose spontaneous movement had been long observed, although its cause had not been ascertained—are provided with locomotive organs or cilia differently arranged in different genera. In conjunction with M. Decaisne, he ascertained that the conceptacles of *Fucus*, in which large brown sporangia and smaller sporidia had been found, either contain at one and the same time both sorts of organs, or contain each kind in a different conceptacle on the same or on different plants; they made out subsequently that the sporidia set free a number of mobile transparent corpuscles which do not germinate; while the sporangium is divided into two, four, or eight parts, each of which constitutes a spore capable of germinating. The facility with which large quantities of spores and of antherozoids may be obtained from the dioecious species of *Fucus* enabled M. Thuret to give in 1853 the experimental demonstration of the sexuality of the *Fucaceæ*: kept apart, the two organs decomposed without germinating, but mixed together, the spores surround themselves with a membranous coat, and germinate. Since that time the nature of the relation between the male corpuscle and the spore at the moment of fertilisation has been more completely determined, but nothing essential has been added to the clearness of M. Thuret's demonstrations of the sexuality of these plants.

— MR. WILLIAM ROLLISSON, of the ancient firm of Rollisson and Sons, Tooting, Surrey, died on June 18, in his 73rd year. The Tooting nurseries were at one time noted for the numerous first-rate varieties of Cape Heaths raised, and for the orchids and new plants imported and sent out from thence. Mr. W. Rollisson was a genial, kind-hearted man, considerate towards all about him, and though advancing years had for some time prevented him from taking an active part in business matters, he will be deeply regretted by a wide circle of friends.

— MR. GEORGE EDWARD, of York, died on June 10, in his 59th year. He was an enthusiastic florist and seedsman, and a frequent exhibitor of florists' flowers, such as Pelargoniums, Dahlias, &c., at the great shows of the North of England.



J. L. Macfarlane, del.

Chromo G. Severeijns Brussels.

Cherries.
1. Early Lyons. 2. Ohio Beauty.

CHOICE GEAN CHERRIES.

WITH AN ILLUSTRATION.

WE have again the pleasure of submitting to our readers portraits of two very fine and comparatively little known varieties of Cherry, belonging to the group of the Geans, and for the specimens of which, here figured, we have to thank Messrs. Rivers and Son, of Sawbridgeworth, who forwarded them to us in the ripe state early in July, 1874.

The EARLY LYONS (fig. 1), ROSE HÂTIVE DE LYON, or GUIGNE HÂTIVE DE LYON, is a very large and handsome cherry, which besides being excellent in quality has a very grand appearance for exhibition purposes. The fruit is roundish heart-shaped, with a faint depression or suture on the flattened side, and having the stalk, which is an inch and three-quarters long, set in a rather shallow cavity. The skin is blackish crimson-purple, or glossy blackish mahogany-colour. The flesh is of a very dark brownish-red, sweet, tender, juicy, and well-flavoured. It is an early variety, ripening naturally about the end of June.

The OHIO BEAUTY (fig. 2) is, as will be seen, of a different character, belonging to the group in which the flesh is pale and the juice uncoloured. The fruit is large, roundish heart-shaped, with a faint suture. The skin is yellow, spread over with bright rich red on the sunny side. The flesh is pale yellow, tender, sweet, and juicy. It ripens about the same time as the Early Lyons.

Both varieties are worth a place in every garden where Cherries are prized.—
T. MOORE.

RESTRICTIVE CULTURE *versus* FREEDOM.

FOR some years I have steadily been pursuing a system of planting-out in my stoves, greenhouses, and ferneries, and as time wears on, the more I see of it, the better I like it. The luxuriance of growth and richness of flower far surpass anything which can be produced in pot-culture without having to bestow the utmost care on cultivation. My system is something like the following:—Besides preparing the usual number of plants in pots for the decoration of the stages of our stoves, &c., and from which we cut sparingly, we prepare another batch, which by the end of August, or at any other time during the summer months when a house of Melons is over, are turned out of pots and planted into the beds vacated by the Melons. The loam is enriched by the addition of some well-rotted dung, leaf-soil, and sand sufficient to make it porous. A good watering when planted, and afterwards once a fortnight or once a month, according to the weather, throughout the winter, is all the attention they require. To save cutting from our dressed Conservatories, we cut freely from those planted out, and it is astonishing to observe how, after a severe cutting, the plants will again break and flower. By this system the old adage of "Cut and come again" is well borne out. Any one having a little pit-room to spare during the winter might with advantage give the system a trial.

The plants which I generally use for this system of planting-out for winter flowering are as under:—*Begonia insignis*; *B. fuchsioides*, one of the most useful; *B. erecta multiflora*, *B. sanguinea*, *B. nitida*, *B. ricinifolia*; these and other varieties can always be cut in handfuls. *Eranthemum pulchellum*, for its blue inflorescence, has always a place. *Euphorbia jacquiniæflora*, when planted out, runs fairly wild; the length of its scarlet raceme is something extraordinary, and when cut it breaks again and flowers freely, which is certainly a feature in its character highly to be recommended. *Justicia purpurea* is also admitted, although not much of a plant to cut from. *Poinsettia pulcherrima* is another plant which rejoices in this treatment; we have had in this way bracts 15 in. across. *Vinca rosea* and *alba* are also useful. *Sericographis Ghiesbreghtiana* is yet one of our most useful winter-flowering plants; for cutting it is invaluable, and we can never have too much of it; we grow it plentifully, and by this system it, too, grows freely. *Thyrsacanthus rutilans* also in this way yields its pendent inflorescence in a most graceful and peculiar manner, as if, in sailors' parlance, dipping its colours in honour of the other plants surrounding.

Planted thinly, many other plants not mentioned above might be introduced, so as to thoroughly carpet the whole of the surface of the bed, which will produce a very pleasing effect, more especially if contrasted with a house where plants are cultivated in pots, and where it happens, as sometimes it will, that pots and not plants are the prevailing feature. Many an amateur, who perhaps could not find time daily to attend to the watering of plants in pots, might in this way have throughout the winter and spring months a very gay house, keeping both his own and his friends' flower-glasses plentifully filled with the choicest of flowers, and this, too, during the most dark and dreary days of mid-winter.

Besides the above-mentioned system of planting-out in beds, I adopt the principle wherever an opportunity occurs. I have now in glorious flower in this way the *Lagerströmia indica*, with shoots 4 ft., 6 ft., and 8 ft. long, bending under their load of flowers. In another house of medium temperature I have *Bougainvillea glabra* in great splendour, which for cutting is certainly not second to any of our flowering plants, and in point of easy cultivation second to none. *Thunbergia Harrisii* is another plant which revels in great wildness, a plant of which, covering a roof 40 ft. long, is, during the winter and spring, a complete mass of flower,—more, perhaps, to be admired on the plant than of use for cutting, as it soon fades. *Ipomœa Horsfalliæ* is another lovely plant when treated in this manner; for years during the winter and spring months we have had the favoured opportunity of seeing this glorious plant in flower, and the racemes when cut and put into glasses have a most pleasing effect, being peculiarly adapted to tall glasses, where the flower-stalk can either hang down or be entwined round the stem of the glass.

Our fernery, which contains a goodly collection of stove ferns and Selaginellas, is treated also on the planting-out system. Some are planted on rocks, some in troughs, some in beds, some by the path-sides, and some everywhere. So quick and luxuriant is the growth in this house, that to keep it within reasonable

bounds, and to prevent the more tender varieties from being killed, we are under the necessity every now and then of giving the whole a severe cutting-back. The number of seedlings in this house and everywhere about is something surprising. Along the sides of the paths of our stoves, what with *Begonias*, *Caladiums*, *Ferns*, &c., the paths are almost lost sight of; so also is the path of the greenhouse with hardy exotic and British ferns, and sore does my heart ache when I see a lady pass through with distended dress, unconscious of my tenderlings. Long rows of the hardy *Adiantum Capillus-Veneris* fringe the path-sides of our melon and pine stoves, enough of which could be had to turf down a goodly-sized lawn.

A few years ago we planted out a house of Camellias, and they, too, have grown so tremendously that it is now necessary to introduce the process of both thinning and selection of the best varieties. Gardening, in every department, like unto everything else, is continually undergoing change. The transition within the last few years is something marvellous, and the pace at which we are now drifting may perhaps be better imagined than described. I have been a country gardener myself all my life, and seldom had much opportunity to dwell long at a time in the national Botanic Gardens of Edinburgh or Kew, but I carry with me a lively recollection of the enormous quantities of boxes I saw in the great palm-houses of those establishments, out of which palms were growing; some of them perhaps healthy, some sickly, some dead, and some with long weird stems, with green tops high aloft, and some, too, pushing their way through the glass for the inhalation of fresh air. Such a state of gardening and such a state of culture may not inaptly be described after this manner:—

“Boxes stood round like open presses,
Which showed the *palms* in their last dresses;
Wi’ mair o’ horrible and awfu’,
Which ev’n to name wad be unlawfu’.”

At Frankfort-on-Main not very long ago I had an opportunity of seeing the celebrated palm-garden there. The palms I found, at least the greater portion of them, not in boxes as above described, but tastefully planted out on a glade of undulating ground, beautifully and completely carpeted over with *Selaginella*. But they do these things better on the Continent. The example of the Palm-garden at Frankfort might well be imitated in this country. What can be more repulsive to a mind fond of observing nature in all its freedom than to observe in our large garden establishments so many thousands of plants some in tubs, some in pots, and others in all manner of places of torture conceivable, struggling hard for dear life? In this way thousands of valuable plants are committed weekly, monthly, and yearly to a premature grave. Plants are dumb, and cannot cry aloud for water, or more freedom of space to grow in; they can only indicate their distress by decay or death. To check all this terrible wholesale plant-torture, would that we had a horticultural Plimsoll to keep watch amongst our garden establishments, a Gustave Doré to represent the carnage of plant life, and a Dante to make plants consigned to the nether regions give voice to the cruelties practised on them whilst in the upper world! Would that retributive justice

might reign for a time, sufficient to punish the cruel and uncharitable of this life, and to be followed by a glorious millennium, during which respite, all nature should smile as the noon-day, there being no more plants cultivated in pots or in tubs, since pots, tubs, and specimens of our modern gardeners would only be seen as fossil objects of curiosity on the shelves of the museums of those days! —WILLIAM MILLER, *Combe Abbey Gardens*.

SOIL FOR MELONS.

WELL remember, when first I saw the old Netted Cantaloupe Melon grown, we used to plant it in a stiff loam, with no admixture of dung or anything else. When the crop was over, the loam was taken back to the heap, and did service, year after year, with such success as your readers may imagine. More recently, I have seen them grown in a lighter material, but still my opinion is, that a good holding loam, well beaten down, is the soil that melons require.

In planting out a house of Melons here some six weeks back, I had one barrow-load of charred soil mixed with three of the ordinary soil, and this has quite convinced me that we are on the right track. Five plants out of twenty were duly planted in the mixture above described. The plants began to push away at once, growing strong and healthy, and reached the trellis at least ten days in advance of the others. Just now we have on these plants melons from 2 lb. to 2½ lb. in weight, the variety being the *Victory of Bath*, while all the others are only of the size of an egg. This shows that the charred material is what they like. Some may say that the difference is in the variety, but there is another *Victory* in the same house planted in the usual soil, which is little or no forwarder than the others. I may add that I have grown twenty varieties of Portuguese Melons sent me by an eminent Grape-grower in Portugal; they are all straggling and weak growers, compared with our English varieties. I will let you know how they behave in due time. [Please do.]—R. GILBERT, *Burghley Gardens, Stamford*.

ANNUALS FOR SPRING-BEDDING.

THE great objection which many persons have to Spring-bedding is that the summer plants are kept so long out of their quarters. Where there is much bedding this is, however, an advantage rather than otherwise; but it does not apply so much to Annuals as to other plants, because there are few of them that stand long after the sun begins to get power in spring.

Again, many persons who try to get a spring display of Annuals fail, from trusting to the idea that they are so easy to manage—there is nothing to do but to sow and transplant them; and then, of course, the winter comes in for the blame of killing them off. This is to be expected, so long as they are merely sown and left to be drawn up in the shape of weakly plants, unfit for anything, let alone standing through the long, damp autumn. Frost is not so trying as this damp. Many who practise this, will have some already up and forming good plants, such as *Silene*, *Myosotis*, *Honesty*, &c. I do not mean *Myosotis dissitiflora*, which is

easily divided, and when once planted is of the weeds weedy. I should much like to see it effective ; once would satisfy.

For most of the small Annuals, the last week in August or the first in September will be a good time for sowing ; some are better even a little later. When up, they should be pricked off into beds. If this cannot be done, they should be raised up slightly so as to break their roots, for the more they are stunted and hardened the better their chance of standing through the autumn and winter. Some of the better varieties can be put in boxes, which is a good plan, as they are then more under control, and there are generally plenty of empties about a place in the autumn.

Collinsias are excellent spring bedders, especially *C. verna* and *bicolor* ; we have not succeeded with the white. The old *Eschscholtzia* for large beds stands well into spring and summer ; but *Lasthenia californica* forms the best yellow bed that can be found, and is perfectly hardy. *Limnanthes* is more of a straw-colour, and rather coarse in habit. *Lupinus* we find good for early cutting. *Myosotis sylvatica* and the white variety are sown in June. Few if any plants beat the fine old *Nemophilas* ; the blue of *N. insignis* is unmatched by anything I know, and no plant is so easy to manage, but this is one of the sorts that should be sown late. *Saponaria* makes good small beds, both pink and white. *Silene ruberrima* is an addition and gives variety, but is not so good as the *S. pendula*. *Candytuft*, of the *Dunnettii* variety, is as hardy as *Honesty*, and is a beautiful rich colour. The old Virginian Stock, *Malcolmia maritima*, is known to every one ; a good mixture with this, or even a good bed, is the Sweet Alyssum, *Königa maritima* ; it is rather surprising that more of this is not grown, both in spring and summer, for next to *Mignonette* it is effective in scenting every breeze that passes over. *Viscaria* and *Schizanthus* are not to be trusted out, but a box or pan of each, kept in a cold frame, will fill an ordinary bed or two. Many grow these for the conservatory, and well they repay the little care that is necessary, by adding, particularly in the case of *Viscaria*, a fine display of colour, especially when the sun is out. We have been and are trying other sorts, and if any one has been successful with sorts not named above, I, and no doubt many readers, would be glad to hear of them.—J. FLEMING, *Cliveden*.

TREE VIOLETS.

THOSE who delight in violets and violet-growing, especially in pots, should at this time carefully pot-up any medium-aged healthy plants of the Tree Violet they may possess ; that is, if they have a suitable place in which to maintain them through the winter and spring months. There is no place that is better adapted for them than one wherein Cape Pelargoniums may be grown and wintered safely. Hence any elevated shelf near the glass, and where air may be given freely and ungrudgingly, in any cool greenhouses, will suit them admirably. When the plants are taken up carefully and potted, without more injury to the roots than is unavoidable in performing the operation, the branches

they may possess, and which previously lay recumbent on the ground, should be divested of all decayed portions or litter, and be neatly tied up to small thin stakes, arranging them according to their length and number. Place them forthwith in a cold frame, or under a tolerably air-tight hand-glass, and keep them periodically sprinkled with water overhead for a week or so, when it will be safe to again commence air-giving, which should be done by degrees, so that in a fortnight or so the lights may be removed altogether. They will need no more potting; but if they are maintained in such a position as that described above, and receive winter treatment such as Cape Pelargoniums need, they will bloom most abundantly towards the month of March, when they will prove acceptable, as they are not only sweet, but showy.—WILLIAM EARLEY, *Valentines*.

TRANSPLANTING FRUIT-TREES.

THESE are few individuals engaged in gardening or other rural pursuits who need to be told that the proper season for planting deciduous trees and shrubs, including our hardy fruits, is from the time of the leaf-fall until that in which the buds are about to swell in spring. Yet from what we frequently see in practice, it would appear that comparatively little account is taken of the very great difference resulting from early autumn *versus* spring planting, more especially as regards fruit-trees. How often do we find—even where a system more in accordance with intelligent observation might have been expected—the planting or removal of fruit-trees deferred until long after the commencement of the new year, very frequently till the buds have begun to swell! And yet, even in the case of small trees of the size usually procurable from the nurseries, where their removal is thus delayed, they generally make so little growth the following summer that a season may be looked upon as lost, and frequently the effects of this late removal may be traced in the second year. If the trees to be transferred are large, and more especially if they have been long in the place from whence they are to be removed, and are transplanted without any preparation in the shape of cutting-back the strongest roots the year previous, the consequences of late planting are generally such that many die outright, or linger for years in a debilitated, sickly condition, making little growth, and each succeeding year are a prey to red-spider and other insect pests.

Through experiments I made many years ago in root-pruning, at different periods of the dormant season, I saw fully the effects of cutting the roots of fruit-trees that were in a strong-growing state, and that had been undisturbed for some years, even to no greater extent than this operation is usually carried to. Strong-growing young trees of the *Bedfordshire Foundling* and *Alfriston Apples*, when moderately root-pruned the first day in March, did not make shoots an inch long during the following summer, and were so weak as not to set a single fruit-bud. The next year they were a little better, but it was not until the fourth season that they formed fruit-buds in sufficient quantities, and every summer would have been devoured with red-spider, had they not been well

syringed with a solution of Gishurst; whereas trees in a similar condition as to growth in every way, and alike operated upon early in September, formed numbers of bloom-buds the same autumn, and were completely studded with fruit-spurs the season after. This early root-pruning was proportionately more satisfactory than when carried out in winter betwixt the times above mentioned.

This, and much subsequent practice of a similar character, convinced me that whatever has to be done that will in any way interfere with the roots of fruit-trees, either by removal or root-pruning to induce fruitfulness, should be carried out early in the autumn. Since then I have transplanted quantities of *Pears*, *Apples*, *Plums*, *Apricots*, *Peaches*, *Nectarines*; as also large *Gooseberry* and *Currant* bushes as early in the autumn as the wood was fully ripe, and just as the leaves began to show signs of falling, always with the best results. *Apples* and *Pears* that have been a dozen years planted without removal, if prepared a year before by cutting all the strong roots to within 4 ft. of the stem, and which are removed thus early, whilst there is yet time for them to make a little root, will frequently bear some fruit the following summer, and produce a full crop the ensuing year. *Peaches* and *Nectarines*, if removed with care, and all their roots so far as possible preserved, which can easily be done where they have not to be taken far, as in the case of a wall that may happen to become overcrowded with young trees that require thinning out—these if moved whilst yet retaining their leaves, and well watered, will often bear a nice sprinkling of fruit the following season. *Currants* and *Gooseberries*, especially the latter, will bear plentifully the next summer, if moved early in the season, even if the trees are large, provided they are not old and beginning to wear out.

I should strongly recommend all who have fruit-trees to remove, or who are contemplating fresh plantations of young fruits, to at once set about preparing for them, as when the work is done early it is more satisfactory every way, inasmuch as there is more assurance of success, with less time to wait for a crop.
—T. BAINES, *Southgate*.

NEW JAPANESE EVERGREEN OAKS.

IN continuation of the notes at page 89, we add figures and descriptive notes of one or two additional Japanese Evergreen Oaks, of which leaves were sent to us by Messrs. Ottolander and Son, of Boskoop; and of others which are cultivated in the rich collection of Messrs. Veitch and Sons, at Combe-wood Nursery, near Kingston, Surrey. The two first mentioned are from the Boskoop collection, the remainder from that of Messrs. Veitch:—

QUERCUS SALICIFOLIA, of Siebold.—This species is of bushy habit, many-branched; the branches being thin, and of a greenish-black colour. The leaves are truly saliciform, undulated, crenate, 4 in. to 5 in. long, and 1 in. wide. The young leaves are of a reddish colour.

QUERCUS SETIFERA.—In this Oak the habit is pyramidal, the branches being stout, and of a brownish green. The leaves are 4 in. to 5 in. long, 1 in. to $1\frac{1}{2}$ in.

wide, lanceolate, the margin, for the greater part of its length, sharply and deeply toothed, terminating in a long point, dark green above, light green beneath, a little twisted. The buds are round, downy, brown.

QUERCUS BAMBUSIFOLIA.—The habit of this tree is densely bushy, the branches erect and spreading, some becoming deflexed, slender, virgate. The young shoots



QUERCUS:—7, *salicifolia*; 8, *setifera*.

are angular, glabrous, and olive-coloured. The leaves are about 4 in. long, $1\frac{1}{4}$ in. wide, exactly lanceolate, serrulate with apiculate teeth, dark shining green above, glaucous beneath, tapering at the base into a yellowish petiole about half an inch long. The leaf-buds are minute, ovoid, acute, with ovate glabrous scales. Of this Oak, Messrs. Veitch possess a fine specimen, some 12 ft. high, with elegant, somewhat drooping foliage, resembling that of a narrow-leaved Willow, but of a

much deeper colour. The tree is stated to be a native of China, and is referred by Seemann to the *Q. salicina* of Blume, but Messrs. Veitch's plant is Japanese.



QUERCUS:—9, bambusifolia; 10, sclerophylla; 11, Burgerii.

According to herbarium specimens, *Q. salicina* has very narrow entire and nearly sessile leaves, while in the Chinese *Q. bambusifolia* the leaves are minutely and sharply toothed, and provided with short stalks.

QUERCUS SCLEROPHYLLA, of Lindley.—This species is an introduction of Mr. Fortune's from North China, and is figured in *Paxton's Flower Garden* i. 59, fig. 37. The branches are glabrous; the leaves are 6 in. long, 3 in. broad, bright green above, glaucous beneath, coriaceous, oblong-acuminate, and coarsely serrated near the apex. Dr. Lindley describes it as a "very fine thing," as indeed is shown by the annexed outline figure from a leaf of one of Messrs. Veitch's plants. Though some of these Evergreen Oaks may have succumbed to one or other of the great frosts which proved so fatal to many similar plants, still, for the southern and western districts of England, for Ireland, or even for the west coast of Scotland, such plants might still be planted by connoisseurs with a reasonable hope of their ultimate survival.

QUERCUS BURGERII, of Blume.—A fine plant, with bushy habit, the shoots spreading, angular, olive-coloured, ultimately smoky-brown. The leaves are 5-6 in. long by $1\frac{1}{2}$ - $1\frac{3}{4}$ in. broad, leathery, dark shining green above, paler beneath, oblong lanceolate, with a long acumen, entire or slightly crenate-serrate near the point, tapering at the base into a yellow petiole 1 in. in length, which spreads horizontally, and is slightly winged near the top. The buds are glabrous, globose, becoming ovoid, and having blunt, suborbicular scales. The species is described as having tomentose shoots, and some of the dried specimens show this. In the cultivated plant, however, the shoots are glabrous. Of this species, two varieties are cultivated in the Combe-wood collection, namely: *Q. Burgerii pyramidalis*, which is distinct as a garden form in its pyramidal habit, shorter leaves, and oblong scales. The shoots of this are angular, glabrous, of an olive-brown colour; the leaves being 4-5 in. long, nearly 2 in. broad, leathery, light green above, paler beneath, oblong, entire or undulate, with a long, often twisted, acumen, tapering at the base into a yellow spreading petiole 1 in. in length; and the buds oblong obtuse, with glabrous, oblong, obtuse scales, slightly membranous at the edges. *Q. Burgerii robusta*, a robust-growing shrub, with stout ascending branches, altogether of stouter habit than the others; the shoots are nearly cylindrical, clear olive-brown, ultimately darker; the leaves are 5-6 in. long, nearly 2 in. broad, leathery, dark green above, paler beneath, oblong, with a comparatively short and abrupt acumen, entire or undulate, the base rounded, and the petiole $1\frac{1}{4}$ in. long, reddish above, yellow beneath, not at all winged; while the buds are ovoid, with glabrous, ovate, pointed, reddish scales. The three forms here referred to *Q. Burgerii* are distinguished readily from *Q. glabra* by their longer petioles and more decidedly acuminate leaves.—T. MOORE.

GOSSIP ABOUT TULIPS.

THIS season—as it may now be termed, being over and passed—cannot be regarded as having been one of the most favourable for the Tulip, or indeed of any other florists' flower, although, so far as I have seen, their growth has been good, the bloom has been good, and the bulbs have proved to be of fair average size, which, after so doubtful a season, is matter of con-

gratulation to the growers. September and October last, the months for preparing the ground, and making up the beds for the reception of the bulbs, were wet, with sharp frosts at nights; and November, the usual time for planting, was, after the first week, mostly unfavourable, since there was much rain, with keen frosty nights. During its first twelve days, however, I managed to get in three beds out of ten; then I was stopped by the frost up to the middle of January, when in the wet and mud I managed to get in two more beds, and was again stopped until the middle of February, when, having five beds to plant, I commenced again, but did not make a finish until quite late in February. Strange to say, the five last planted beds came up, grew, and did equally as well, or even better, than the three beds planted in the fore part of November. The two beds planted in January did by far the worst; many of the roots rotted in the ground, and those which survived broke up into small withered offsets. With the exception of those two beds, I never had a finer growth, or a better prospect of a fine bloom, up to the morning of May 23, six days before the National show-day, when we had one of the most fearful thunder and hailstorms I can recollect; the storm lasted over half-an-hour, hailstones like lumps of ice of the size of marbles, with blustering winds, cutting down the blooms and the grass of the plants as if they had been put through some chopping-machine. Cabbages, Rhubarb, and young plants of different vegetables were also completely spoiled. The early part of that morning was clear, and the sun was very hot, which caused the blooms to spread themselves quite open, and the storm came on very suddenly while the flowers were in that open state. I had only just time to get the cover on the one bed I protect for showing from, and even on that bed some of the flowers were injured by heavy rain and hail beating through the cover, but with all, I don't suppose a finer bloom of Tulips has been witnessed during 1875 than this bed contained. From my collection of seedling breeders I have some of the finest breaks I ever had in any one year previous to the present, but unfortunately, with the exception of one flower which happened to have a bell-glass placed over it, all the others were cut up before I had time to tally them. Thus ends my first story, which I think will be vouched as correct by any Tulip-growing friends.

As I have on several occasions been asked by some of our younger fanciers to give them advice on the growth and management of this flower, and on the preparation of the beds, &c., and as the season is now coming on for commencing operations towards another season's growth, I will offer a few hints that may be useful. The first requisites are the Soil, and the proper Preparation of the Beds. Those who may have ground which is tolerably fresh, loamy, or sandy, will, for the first season's growth, only require a good dusting of quick-lime, sifted through a sieve with half-inch meshes, the lime to be thrown over the bed and forked in. After that, let it rest for a week or ten days, and then give it another forking-over, and repeat the forking three or four times at similar intervals. Then throw out the soil to nearly a spade-depth, and if it can be

got, obtain a load or a few barrowsful of fresh turfy loam, chopped up with the spade rather fine, but not sifted, and put this loam in the bottom of the bed. After that, where strong and vigorous growth is required, get a quantity of clean cow-dung from the field, fresh, if it can be had in that state, but if not, get it from a heap; procure a good-sized tub, or butt, as it may be termed, partly fill it with water, put in a spadeful or two of the dung, give it a good crushing, and stir up well with a garden-rake till it is made into a fine paste, and splash this all over the fresh mould in the bottom of the bed. I should say that for a bed of 100 rows, one good barrowful of dung, made into liquid in the way above described, will be quite sufficient. After the liquid has been laid on, allow it to remain for a week or two open to the weather—rain, sun, and air—to sweeten, and then give it a good forking-over, patting it down tolerably close with the fork. Let it still lie open to within ten or twelve days of the time you wish to plant, when the soil which has been limed and well worked over should be filled in, and in the above stated time it will settle down ready for drilling for the bulbs. I *prefer drilling* to planting on a flat surface; and where the soil is heavy, close, and of a retentive nature, I would advise the use of a little clean-run road-sand, about a teaspoonful being put in the hole, and the bulb placed thereon; then on the bulb put another spoonful, and fill up with the ordinary mould. I don't see that I need say more on this head.

As to my trying to advise old Tulip-growers, I know it is useless. Some few I know are prejudiced, and fancy their own notions are best, but others are not so; some will give and take advice, and most of those who have been as long in the fancy of growing Tulips and other florist's flowers as I have, know quite as well as I do what their requirements are. I think all the latter are pretty well agreed upon one thing—that the chief motto for success in the Tulip fancy is Fresh Soil, and I will add that the oftener the roots get changed from one sort of soil to another the better; not only so, but a change in locality is equally necessary and beneficial for keeping them in the fine perfect strain which only is fit for exhibition.

I maintain that any man, be he ever so mindful how he lays out his money in the purchase of fine strains of Tulips, may hoard them up, and fancy himself up to the mark with any other grower, but that by keeping them to himself for a short number of years, and growing them continuously in the same soil and situation, he will find his fine strains begin to sport, to get "kaily" in growth, and to dwindle down until he has scarcely any sound roots left. This has been the cause of the disappearance and loss of so many fine old varieties. Through care and watchfulness, I found this out years ago, and I know some others also who have now begun to find it out. If Tulip-growers generally could be a little more united, and could place more confidence in one another, not only as regards the buying and selling of the roots, but by interchange of growths: such as two growers one hundred miles or more apart agreeing to take a quantity of bulbs from each other, to

plant them for a season or two seasons, and after that each to return to the other his own roots—if such a thing could be honestly contrived and carried out, both sides would be benefited. I know that it is not every one who would agree to such an arrangement, but if, say, a couple or four growers could be induced to try the experiment, and if after such a trial it were found to answer, this would be an incentive to others to try the plan more extensively. I will leave this subject for the present, as perhaps some one or more of our Tulip-growing friends may have something to say about this, or some of the other matters I have adverted to. I may add that I am aware my time in the floral world is fast hastening to its close, so that my vast collection of Tulips and other flowers are likely soon to get more extensively distributed.—JOHN HEPWORTH, *Huddersfield*.

GARDEN WORK FOR SEPTEMBER.

FLOWERS.

SO far as the season has gone, flower-gardens have not been as effective as they usually are; this is owing to the prolonged wet, from which the flowering plants, such as *Pelargoniums*, have suffered severely, the development of the blooms being prevented. Foliage plants, on the other hand, are growing luxuriantly, thus enabling us to form a just appreciation of the real advantage of a liberal admixture of foliage, in combination with flowers in the composition of our groups. I find that *Calceolarias* have gone off with the disease this season more than they have done before, and I think that where they are subject to do so, it is far better to depend upon *Violas* as a substitute, as it is annoying to have the effect marred when it should be at its best. Frequent hand-pickings will now be necessary to keep the beds from decaying petals and foliage, as much of the effect depends upon the trimness and exactitude with which the plants are kept. Weeds upon walks will be troublesome after so much wet, and must be kept under.

This is a good time to divide and replant Perennials that have been cut back after flowering, so that they get established before winter. Plant out *Pinks*, if not already done, into beds that have been prepared for them, the fresh soil and manure for which should have been frequently turned to sweeten; in doing this keep a sharp look-out for grubs, which are so destructive to them, and are not unfrequently brought in with the fresh compost. Pot-up *Carnation* layers, or plant them out as soon as rooted. *Polyanthus* and double *Primroses* may also be divided and replanted. Make a successional sowing of *Hardy Annuals* upon a soil that is not over rich, as upon such ground they stand the winter best. *Dahlias* should have their branches securely tied up, in case of high winds, removing occasionally the decaying blooms. *Hollyhocks* may still be propagated from cuttings when the stock is deficient, and the present is a suitable time to select the best strains of *Phloxes*, *Pentstemons*, and *Antirrhinums* to increase from cuttings.

Evergreens may now be transplanted, and increased by means of cuttings, which will now root freely in nursery lines, if taken off with a heel—that is, with a portion of the two-year-old wood attached—and firmly planted.

Conservatory: The finer varieties of the *Zonal Pelargoniums* which have been grown in pots in the open air, will now prove most effective in the house, if placed upon an airy shelf near the glass, and will produce an abundance of bloom until mid-winter, if watered carefully at the root. A few plants of *Salvia splendens*

will prove serviceable in combination ; if grown in pots throughout the summer, they will now be coming into bloom. The earliest section of the *Chrysanthemums* should at once be placed under glass to forward their flowering. *Tea Roses* that have been grown on and pinched frequently back will produce an abundance of fragrant blossoms for conservatory decoration at this season. *Griffinia hyacinthina* is also a most desirable decorative plant for autumn display, while the lovely *Vallota purpurea*, with the more general blooming plants of this season, and some of the fine-foliage plants, judiciously placed, will combine to present a fresh and pleasing display. The growth upon roof climbers should be regulated so as to admit a sufficiency of light to the plants underneath. The shading should be used only to subdue direct sunshine : in fact, it may almost be dispensed with.

Fuchsias should now be propagated for growing on during the winter. When so grown, they form famous plants early in the season, and are useful for decorative purposes. Give attention to the late-blooming varieties that have been grown out-of-doors ; these, if liberally treated now, will produce their blooms until late in the autumn.

Chrysanthemums that are intended to be potted up from the borders should be lifted towards the end of the month and placed in a shady situation, freely sprinkling them overhead until they take fresh hold. Give attention to the tying-up of established plants, and encourage with liberal applications of manure-water.

Greenhouses : As the majority of the plants must be housed during the month, these structures should have a thorough cleansing preparatory to being refilled ; each plant should be individually examined and cleansed as it is brought in. Watering must be judiciously performed at the root, and an abundance of air given, so as to thoroughly ripen the wood. *Camellias* should have an abundance of air both night and day, and must not be allowed to become dry at the root, as any sudden check at the stage of bud-swelling is certain to cause the buds to drop ; keep the foliage thoroughly clean by sponging with water in which a little soap is dissolved.

Orchids : Many of these, which make growth freely during the autumn months, are apt to be restricted prematurely at this season by sudden exposure ; this is more particularly the case when house-room is limited, as plants that are finishing growth require less water and less atmospheric moisture, with a freer ventilation and more exposure than is conducive to the promotion of active growth ; in as far as possible, these conditions must be provided for in each case. *Dendrobium nobile* should ripen its growth in a light, fully exposed situation, gradually withholding water and reducing the temperature, which will induce the setting of the buds ; when thoroughly matured, this is one of the most valuable winter-blooming plants we possess.

Stoves : Slight fires will now be necessary, in order to thoroughly ripen the wood before the winter ; abundance of air must therefore be given, and the plants kept drier both at root and top. Watering should be attended to in the morning, which will prevent undue humidity when the house is shut up. Thin out the wood upon roof climbers and keep them within bounds, so that they intercept the light as little as possible. Winter-blooming plants must be kept near to the glass and freely ventilated, so as to encourage thorough maturation.

Push forward the propagation of *Bedding Plants*, and continue to pot off cuttings as they become sufficiently rooted. Propagate *Violas* in a cold frame under a north wall ; so far, they are our most effective blooming plants this season. Fully expose this class of plants when grown in frames as long as possible, as stocky firmly-grown plants will be found to winter best. Thin out *Mignonette*, and sow

for succession; also *Ten-week Stocks*. Let *Roman Hyacinths* and *Duc Van Thol Tulips* be potted as soon as procurable, in order to be ready for early flowering.—
G. WESTLAND, *Witley Court*.

FRUITS.

Pines: See previous directions in regard to potting the fruiting plants, and if any remain undone, they should be proceeded with at once; also pot crowns and suckers, place them in a moist growing heat, and keep them close and slightly shaded for a time till they are rooted, after which the usual treatment for succession plants should be given. Give a liberal supply of water to all, and be careful that the bottom-heat does not get too violent at any time. Keep a moist growing temperature from 70° to 75° where the fruit is swelling, and let it rise to 90° during sunshine. Those plants intended for fruiting in the spring should not be overdone with water, and be careful to keep the temperature steady.

Vinery: Keep a dry atmosphere for ripe Grapes; if there is any damp in the house, or in wet weather a little fire-heat through the day would be beneficial, at the same time admitting plenty of air to dry the house. Cut out all decayed berries, and nail gauze over the openings if wasps are troublesome. Fire-heat will be a help to late Grapes, especially Muscats, till such time as they are perfectly ripe. Pot-vines intended for fruiting next season should be taken out of the house as soon as the wood is ripe, and the canes nailed to a warm wall; cover the pots with litter, and let them remain till required for forcing.

Melons: Late melons will not require much water after this time. Keep up a good heat, if there is any convenience to do so, otherwise, make the best of sun-heat, by closing the frames early in the afternoon. Cover at night if the weather becomes chilly.

Orchard-house trees in pots, where the fruit is gathered, should not be allowed to get too dry, but every attention given them in that way, as well as in keeping them clean, so that the foliage will remain healthy to the last. These houses may now be kept open night and day, except where there are any late peaches or other fruit to ripen off.

Strawberries in Pots: These may still be potted for late forcing; treat as before advised. Clear away all weeds and runners from those potted last month, and water them occasionally with liquid manure; still keep them in an open situation.

Hardy Fruits: Judging from appearances, wasps are likely to be very troublesome during the present month; therefore every means should be used to destroy them, as well as every other insect likely to damage wall-fruit. *Impératrice*, *Coe's Late Red* and *Golden Drop Plums* should be secured with nets or canvas, for use late in the autumn. *Late Peaches* should have good root-soakings of water, if the weather is dry, the trees being washed as well, till the fruit is ripening. Remove a portion of the leaves that cover the fruit, so that it may have full exposure to sun and air. As soon as any Peach or other wall-trees are clear of the crop, go over them, and after clearing out all decayed leaves, and cutting away any useless shoots, give them a good washing with the garden engine. *Strawberry* beds should now be cleared at once from all runners and weeds, and the ground dressed with rotten manure, forked in between the plants; prepare fresh ground for making new plantations, as this is a good time for planting them. If any are required for spring-planting, the runners had now better be taken off and planted in nursery-beds, in rows a few inches apart.

Cut out the old canes and tie up the fruiting shoots of double or autumn-bearing *Raspberries*; water them with liquid manure if the weather is dry.

Every attention should now be given to the ripening crops of orchard fruit ; *Early Pears* especially should be watched, for many kinds, if allowed to hang a few days too long on the trees, become mealy and worthless ; these should be gathered in time, and placed in a cool room. It is quite the reverse with *Early Apples*, as the majority of these are best if gathered from the tree as they may be required for use ; these remarks, however, must only be applied to the *earliest* varieties ; others, ripening later in the month, may be stored with advantage.—J. POWELL, *Frogmore*.

VEGETABLES.

Such seed-sowings as were made during the early part of last month will have yielded plants which will now need attention in several ways. *Spinach*, as soon as the plants become large enough, should be thinned out in the rows in such a manner as to leave to each plant room to form a heart or centre independent of its associates in the row ; it is not necessary to thin them greatly, providing the individualism of each be insured, but in no wise should two or more seedlings be permitted to cluster together ; by this means each will become imbued with a natural strength, and will be likely to stand through, and resist the hardships of winter, producing a crop of leaves which, if picked in succession as they form, are not likely to discommode, or unduly overgrow the hearts or centres of neighbouring plants. It is all-important to hoe well between the rows of *Spinach* as frequently as possible, as this also tends to secure greater robustness ; and besides, by admitting the air more freely down to their roots and around their succulent collars, it proves an additional safeguard against severe frosts and wet weather, which often cause them to decay.

The *Onion* crop will now in the majority of instances require drawing, drying, and harvesting. It is simply necessary to pull them and lay them in "lands," upon a fine dry day, and during dry weather generally. Turn the whole of them over by the aid of a wooden rake once or twice subsequently, and choosing a fine day, remove them on to the floor of any dry, airy shed, that may be convenient. Here they may be assorted as necessary, the large ones probably for roping, and the lesser ones to store for use. If the litter and loose parts generally, such as any green leaves, &c., which are attached, be removed, the crop may be placed in rather large heaps together, as in that way they keep equally well in any proper shed or store-room. Where the Onions, being "necky," have not ripened off sufficiently, have resort to the usual method of bending down the necks of such as are erect ; this will hasten bulbing, and besides increase the size of the bulbs. Thin-out also seedling *Endive* and *Lettuces*, sown during the past month, taking care to transplant such as are drawn in process of thinning, for future supply, as all such will certainly "come in" useful, the tendency to bolt or run to seed being now very slight ; make other sowings of the two latter subjects, upon some sunny and sheltered site, and tie up successional batches for blanching ; this may now be performed in larger quantities than previously.

Earth-up *Celery* in succession, and a little at a time as regards the soil, because if too much be packed against the plants, they are almost certain to become more or less crooked. The various *Broccolis*, *Kales*, *Savoys*, *Brussels Sprouts*, and all similar crops should now be well moulded-up, by drawing the soil freely towards the plants in the rows, on both sides. Transplant seedling *Cauliflower-plants* towards the end of the month, and prepare the necessary beds for *Spring Cabbages*, a good site being the old onion-bed, which in the case of light soils need not be fresh-dug for them.—WILLIAM EARLEY, *Valentines*.



CAMPANULA SMITHII

CAMPANULA SMITHII.

WITH AN ILLUSTRATION.

UNDER the name which is here adopted, this pretty Bellwort was shown at a meeting of the Floral Committee in July, 1874, and gained a well-merited First-class Certificate. Its extremely floriferous character stamps it at once as a popular plant of high merit, while the pretty grey-blue colour of its flowers and its hardy character mark it as a plant desirable for its distinctness, and one which may be made available for general decorative purposes. The plant originated with Mr. William Smith, of Wilmot Road, Leyton, and our figure was made from specimens communicated by him. It may be compared to an erect-growing *Campanula fragilis*, and its history may be summed up in the remark that it sprang up accidentally in a frame wherein *C. fragilis* and *C. pumila alba* had been largely grown for market purposes. It may therefore be fairly presumed to be a natural hybrid.

There can be no question that this *Campanula Smithii* is a charming novelty among dwarf-flowering plants suitable for decorative purposes. It is a perennial, requiring probably the protection of a frame, but possibly quite hardy. It has small hairy ovate toothed radical leaves, and erect hairy scarcely leafy stems, growing about 6 in. high, freely branched, and bearing a profusion of semi-erect delicately tinted greyish-blue bell-shaped flowers, which are smaller than those of the trailing-stemmed *C. fragilis*, and less tubular than those of *C. pumila alba*, but showing very much of an intermediate character.

Our figure represents, we believe, the parent plant; but we learn from Mr. Smith that young plants raised from cuttings, and only 3 in. to 4 in. high, produced flowers at that early age.—T. MOORE.

FORCING THE HAUTBOIS.

WE seldom miss having a few nice dishes of Hautbois Strawberry; and where its rich peculiar flavour is appreciated, they well repay the little labour or care necessary, while at all times they make an agreeable change. As most people are now getting their stock ready, I put this hint forward, as a word in season.

The best runners are two-year-old ones, potted into 48-sized pots. They do not at any time require such rich soil as other sorts; a light sort of chalky soil seems to be best suited for them, and they most likely will be found to do quite as well the second year if left in the pots, or with a slight shift. They are remarkably pretty when in bloom, and the fruit sets without any difficulty. They look best when placed on the table in small baskets, with the foot-stalks attached, treating them as Wood or Alpine Strawberries.

There are two sorts generally catalogued, *Myatt's* and the *Royal*, between which I see no difference; the first lot we had here came from the late Mr. Cuthill, who was fond of trying experiments on this and other varieties. To

show how easily people may make mistakes, I may mention that shortly after we got a good stock of plants, we put some out in an old kitchen garden, and added plenty of chalk at times. We found them to be very useful, as we could always go in autumn and get a few fair dishes of good flavour. In time, this old garden was destroyed, and the Hautbois was planted into a strong clayey loam, such as good growers would consider perfection for the varieties of the British Queen race. The result was, that if we had not known the qualities of the variety before, we should have said it was the sterile variety that never fruited.—J. FLEMING, *Cliveden*.

SCUTELLARIA MOCINIANA.

WILL you allow me, through the medium of your pages, to draw the attention of those brothers of the craft who have any considerable amount of plant-furnishing for drawing-room, staircase, and boudoir adornment, to the remarkable adaptability of *Scutellaria Mociniana* for this purpose. It can easily be grown in any sized pot, from a small "60," to one suited for a specimen as per Baines, and will flower as successfully in the small pot in proportion to its size, as it would if grown in one 15 in. across. It has a charming manner of exposing its rich orange-scarlet heads of tubular flowers; and no one can pass without being arrested by the brightness of its colours when in full beauty.

My object in bringing a plant of this description before your readers is because it generally receives a bad character. Its habit is said to be bad and straggling, but I find it acquires this straggling habit in the same way that a great many other bad habits are attained, namely, by its bad bringing-up. Being a stove plant, it gets treated in general as stove plants usually are treated, being afforded a moist heat, and a considerable amount of shade, which treatment is to this plant positive cruelty. When grown in full sunshine, in moderate heat, and with sufficient air, it flowers freely as soon as it attains a height of 8 in. to 10 in., and plants in small 60-pots will often have four or five of its lovely trusses of flowers fully expanded at one time. By putting in batches of cuttings every few weeks, this plant may be had in flower all the year round. Peat, loam, and sand, with good drainage, will suit its requirements as to soil.—WILLIAM DENNING, *Norbiton*.

ARTOCARPUS CANNONI.

IF the several subjects of interest exhibited at the meeting of the Royal Horticultural Society on the 18th ult., three forms of *Artocarpus*—the genus of the Bread-fruit tree—claim especial notice. They were all natives of the Islands of the Pacific, and had been recently imported into this country. They consisted of *Artocarpus laciniata* and *A. laciniata metallica*, from the collection of Messrs. Veitch and Sons; and of *A. Cannoni* from the collection of Mr. Bull, the latter being represented in the accompanying illustration, for which we are indebted to Mr. Bull, who describes his plant as follows:—

“This remarkably ornamental plant, which is a native of the Society Islands,

was first made known to me by Mr. Walter Hill, of Brisbane, and was afterwards sent to me in a living state by Mr. Henderson, of Sydney. It is, without exaggeration, one of the finest coloured-leaved plants which it has ever been my good fortune to offer. It is a plant of free-growing habit, with a woody stem, which is hirsute in the young state. The leaves are very variable in form,



ARTOCARPUS CANNONI.

alternate and petiolate, the petiole and hairy costa being of a bright red colour. The leaves, which measure at least a foot long and 7 in. wide, are of membranous texture, with a glossy upper surface, and of a rich, full, bronzy-crimson hue, beautifully tinted with purple. The colouring is remarkably rich and constant, that of the under-surface being of a bright vinous-red.

“The form of the leaves varies greatly; some are simple and cordate at the

base, parallel-sided, with the apex irregularly lobate ; some have the apex regularly three-lobed, with short entire lobes ; some are deeply three-lobed, being divided nearly to the base, the segments themselves, of which the centre one is largest, being shallowly sinuate-lobed, and occasionally the secondary lobes are themselves sinuately toothed. This variety of form, and the rich colouring of the polished surface, render this one of the most effective coloured-leaved plants of recent introduction ; and there is not the slightest tendency in the colouring to vary or fade, so that the effect produced is a permanent one."

Whether or not these *Artocarpads* will thrive in the sub-tropical garden during summer, can only be ascertained by experiment, and the present season is not favourable for the trial ; added to which, they are yet too costly to be thus risked. If they succeed, they will give us some of the finest plants used for this style of gardening. If they do not, and their culture is confined to the hothouse, the form and colouring of the leaves will still render them pleasing and ornamental.

Of *A. laciniata*, the Messrs. Veitch state that it is an interesting and distinct stove-plant, from the South Sea Islands, received through their correspondent, Mr. Baptist, of Sydney. It is of free growth and very distinct, both on account of its deeply-lobed leaves and bright glossy colouring. The size of the largest leaves is at present 13 in. in length, and 9 in. in width, but they will probably become much larger as the plants attain strength. Of the variety *A. laciniata metallica* they state, that it was imported from the same source, and is of similar habit, but with very differently coloured foliage. The leaves have a glossy bronzy lustre above, tinged with a deep red, which imparts to it a tone of colouring that will secure for the plant general favour. In their present stage of development, as compared with Mr. Bull's plant, these forms of *A. laciniata* are somewhat more divided, or rather, perhaps, show none of the less divided leaves of *A. Cannoni*, which latter, again, is the deeper-coloured.—T. MOORE.

THE GARDEN BROOM, AND HOW TO USE IT.

THE out-door garden Broom or Besom is so important an implement, that I propose to offer a few practical remarks on its construction, and on the economical and practical way in which it should be put to work. There is some little common-sense and science required even in the make-up of a besom, and in the method of working it, just as there is in making a mouse-trap, and setting it so that it will readily catch a mouse.

In the year 1842, when the late Mr. Loudon visited me at Bickton Gardens, some of the first things he observed, were the shape of my garden brooms, and the economy of time and the great saving of strength and labour secured by their use ; and he requested me to furnish him with a model, to be figured in his *Gardener's Magazine* for the year 1842, where my account of it was published. I observe, however, that very heavy, ill-shaped bundles are still made up as brooms, and used for out-door sweeping ; while the awkward, unworkmanlike way in which the broom is handled, by many who profess to be sweeping, is quite astounding,

in these advanced days. It seems to me, that some men go muddling on in the mediæval way in which they were first taught, clinging to their original ideas, wasting their strength and time, without giving one moment's thought to any improvement, and without considering that the labour involved in using a broom, may be turned to good or bad account. I have seen very recently three men at work in company occupied in sweeping one single walk of no more than 7 ft. width: two of them side by side with brooms, and the third wheeling the barrow on a little way, and waiting to take up the refuse that the other two had swept up to him, and which he then scraped up and placed in the barrow, the other two, the sweepers, waiting while he performed his part, and then going on for another spell, while the barrow-man again waited at a short distance—and so on. The sweepers handled their brooms in the most unscientific, cross-handed manner possible, like thoughtless awkward boys. I have been quite ashamed to see such things still practised. In the first place, of those three men there were two too many for the job; they were in each other's way, and could not have displayed the least science in handling the broom, even if they had been possessed of it.

The fact is, that walks which for some time have been under this unscientific mode of treatment, become entirely spoiled, the stones being dragged towards the sides until they are nearly buried, the walks becoming sloped to the middle and also worn into a gully, which fills with water and mud after every shower that falls, making them most uncomfortable for any one to pass along without being furnished with mud-boots or a boat! It is really astonishing that such practices should still continue in vogue. One man (or lad) who had been taught the science of sweeping, and who made proper use of the broom on either walks, roads, or grass, would perform his work better and more expeditiously than three such men as I have above described. As I find various absurdities still in practice, not only as regards the use of the broom, but of other garden-tools, I intend to discuss these matters in the hope of working some reformation.

For a man's own comfort, as well as with the view to the economy of time and labour, he should always be instructed to make use of the broom (or any other tool) in a manly, scientific, and proper manner, changing quickly from right to left, or left to right, as occasion requires, and not working, as we so constantly see, back-handed or cross-handed, the lower hand put to the tool-handle the wrong way, and the man himself sidling along like a crab, or in some awkward, unnatural posture.

The broom-handle should be made of a proper size for the hand, and of some light, soft, tough wood, and should be of a convenient length and set at a proper angle. The workman should always practise its use from left to right, and from right to left, since this change rests the body, and wears the tool evenly. It is astonishing how the workman saves his strength and his time, and rests his frame, by the practice of performing both ways; also, what an amount of extra work can be

performed in the same time, as compared with that which is accomplished by the unscientific awkward workmen above described.

The brooms for general work about the garden and pleasure-grounds should be of two or three different shapes and sizes. For sweeping close-cut grass or extensive lawns, my fan, or hen-and-chicken broom, was made of long, tough, fine birch and heath, tied in five or seven small bunches, and then placed together in the shape of a fan, thin and flat, and from 3 ft. to 4 ft. in length in the centre—that is, from the centre of the base to the outside of the spray, and nearly the same in width. These are furnished with light handles from 4 ft. to 10 ft. in length, made to take in and out, to suit the work and weather. Thus in sweeping well-kept close-cut turf, a new broom, with a 10-ft. handle set at a proper angle, will sweep clean from 18 ft. to 22 ft. in width, and a man will soon clear several acres. If there is a heavy swathe of grass or leaves, and the weather is damp, a half-worn broom with a 7-ft. handle is placed to work, and two swathes, or from 12 ft. to 15 ft., can be easily cleared at a full swinging sweep. In this way a large extent of ground will be soon cleared. The brooms, after being in this way three-parts worn down, should be cast on the rack in readiness to receive them, and when the 4-ft. handle has been put in, are ready to be used on hard roads, yards, pavements, piggeries, cowhouses, backyards, and the like. Finally, when the broom became worn down so as to be no longer useful as such, it should be returned to a large crate, to be cut into useful flower-garden pegs by the garden boys in rough weather or by candle-light on mornings and evenings in the short days of winter. This kind of broom can always be turned to useful account.

Besides the lightness of the fan-shaped broom, however, its economy in the way of expeditiously clearing off a large amount of work is such that no other kind of broom can compete with it. It never clogs with dirt or worm-casts, or gets heavy in wet weather by holding a weight of moisture, but it always works cleanly—a most essential thing in economising labour and strength. It has, indeed, great advantage in every way over the round-bundled birch or heath broom so commonly used, which, from its shape and make, and its short handle, cannot be worked with speed and economy, while in wet dirty weather it gets clogged and loaded with wet and filth, so as to exhaust the workman's strength and time.

I had in use a medium-sized fan-broom for sweeping dressed well-kept walks and roads, and the grass about and between flower-beds, verges, &c. This was made with a mixture of fine tough birch and heath. Thus by bringing a little science and forethought to bear on so common an operation as sweeping, neatness order and economy are secured. But, after all, it is not so much the shape of the broom which is to be regretted, as the lack of a little common-sense in turning the time and strength of the workman to good account. Surely this matter is worth some consideration.—JAMES BARNES, *Exmouth*.

GARDEN GOSSIP.

THE *National Carnation and Picotee Society* held its annual show on the 13th ult., in the Manchester Botanical Garden. The date was too late for the Southern florists, but those from the North mustered in force, the result being an excellent show. At the meeting of subscribers, the Hon. Treasurer and Secretary, the Rev. F. D. Horner, reported that after defraying all expenses of the exhibition, a balance of £14 remained to be carried on to next year's fund. The exhibition is fixed for August 11, 1876, and Mr. E. S. Dodwell was elected President by acclamation.

— THE annual meeting of the *Pelargonium Society* was held on July 22nd, on which occasion several of the members dined together at the Criterion Hotel. The treasurer, Dr. Denny, reported a healthy state of the finances, a balance of over £20 remaining after paying the prizes awarded at the exhibition on the previous day, and all the working expenses. The sum paid out in prizes was £40. It was hoped that the Society, now that it had become better known, might draw around it more abundant support, so that encouragement might be extended to other classes of Pelargoniums, besides the Zonals, which was the class specially in view when the Society was originally founded. The inducements offered by the Society may, it is hoped, set hybridisers to work, and so be the means of obtaining new types of this useful decorative family.

— THE usual reports on the *Condition of the Fruit Crops* published by the *Gardeners' Chronicle* show that in the various counties of Great Britain and Ireland the crop has been unusually abundant. This remark applies almost equally well to fruits of all descriptions, and says much for the ripening of the wood last autumn, and the relative absence of spring frosts this season. Of course, there has been some drawback, and that was furnished by the excessive summer rains, owing to which Strawberries, Cherries, Currants, and other small fruits were spoiled in large quantities, and in some cases the condition of the fruit was such that it was not deemed worth while to gather it.

— A *New Hybrid Lily* just bloomed in Mr. Waterer's nursery at Knap Hill proves to be one of the most beautiful which has yet appeared in our gardens. We hope shortly to publish a coloured figure of it. It has the appearance of being a cross between *L. auratum* and *L. speciosum*, but partakes most of the latter parent. The flowers, when the segments are straightened out, measure nearly 14 in. across, the petaline segments being 4 in. wide and recurved from the flatly-expanded base. The colour is white towards the tips of the segments, suffused with rich rosy-crimson near the base, and there dotted over with deep crimson spots and warts, while its fragrance is delicate and most agreeable.

— MR. ELWES, in a recent notice of Herr Leichtlin's garden, invites attention to the extraordinary *Varieties of Lilies* which exist in the gardens of Japan, apparently hybrids between *L. longiflorum*, *auratum*, and *speciosum*. Their beauty is astonishing, and their variety endless; but whether on account of their rarity, or from the delicacy of their bulbs, they are still quite unknown in England. A number of these plants were, it is said, exhibited at the Vienna Exhibition, some of which are still alive in Europe, among them being a plant named *L. Elizabethæ*, which resembled *L. speciosum rubrum* in colours, and *L. auratum* in form and size.

— NEARLY eighty years ago it was asserted that camphor had power to *Hasten Germination*, and a similar property was subsequently attributed to chlorine, bromine, and iodine. These statements have been recently put to the test of experiment by Heckel, and found to be correct. The seeds of *Raplanus sativus*, exposed to the action of pure water, began to germinate after an average interval of eight days; similar seeds, kept moist with iodine-water, germinated in five days; with bromine-water in three,

with chlorine-water in two days. The monobromide of camphor was found to exhibit even greater energy than either of its constituents taken separately, or than a simple mixture of bromine and camphor, germination occurring after a mean interval of thirty-six hours. The alkaline borates and silicates were found to retard germination, even in relatively small proportions; stronger solutions checking the process for an indefinite period. Arsenious acid and the soluble arseniates prevented germination altogether by destroying the embryo.

— IN the Knap Hill Nursery *Picea magnifica* is now producing cones for the first time in England, if not in Europe, on a young plant some 4 ft. to 5 ft. high. The cones, of which three are produced, are already nearly full-grown, and are quite distinct from those of *P. nobilis*, with which this fine Fir-tree has been confounded.

— THE following *Six Pears* are recommended in the *Moniteur Horticole Belge* for those who wish to have Pears from July to May:—1, *Beurré Giffard*, ripe at the end of July and beginning of August; 2, *Williams's Bon Chrétien*, end of August or beginning of September; 3, *Louise Bonne d'Avranches* (of Jersey), end of September; 4, *Beurré Durondeau*, October and November—the flowers of this variety are said to withstand spring frosts better than any other; 5, *Beurré Diel*, November and December; 6, *Bergamotte Esperen*, January to April.

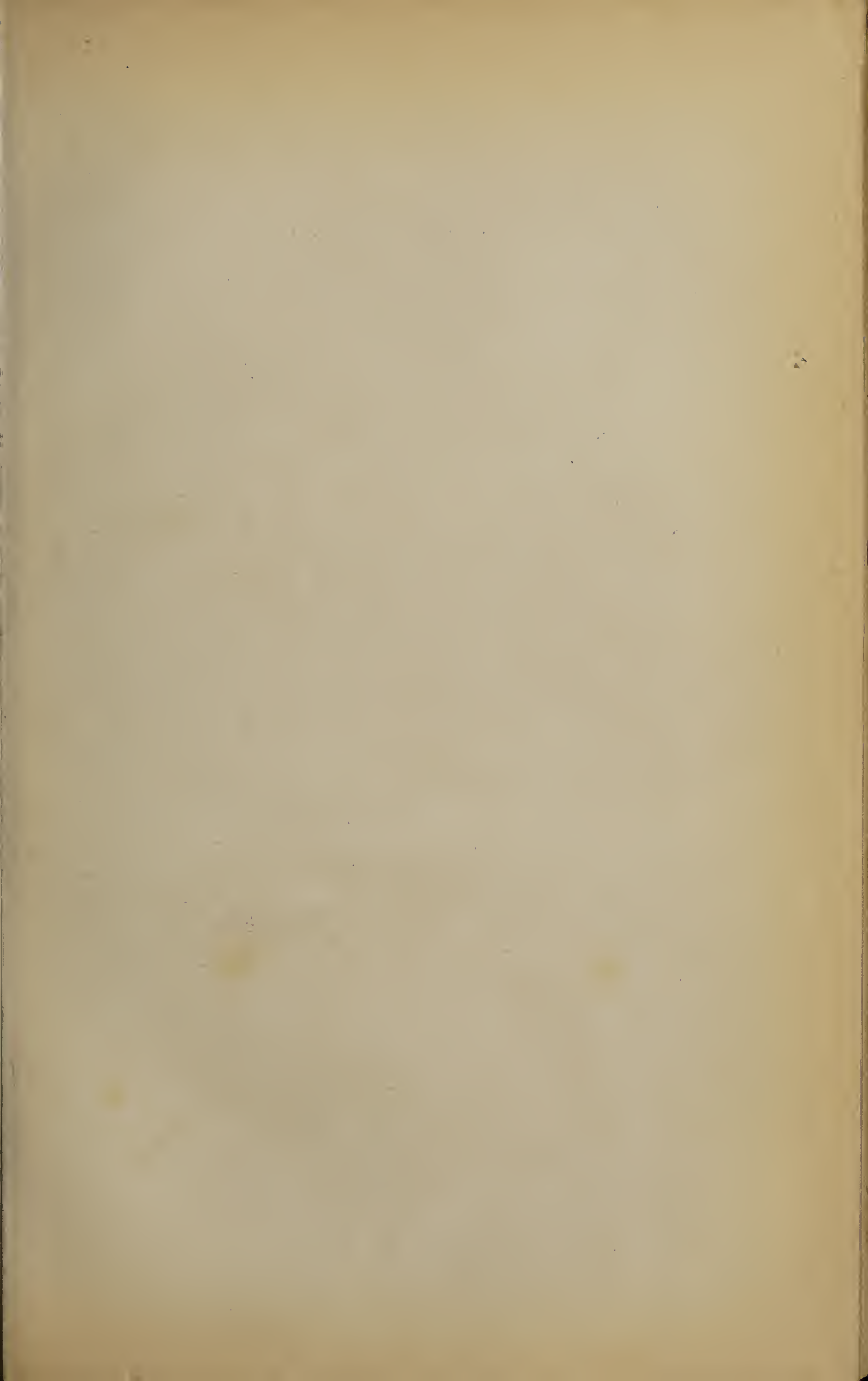
— MERR LEICHTLIN cultivates a charming little species of *Agapanthus*, called *A. Maoreanus*, which is quite new and distinct. It produces numerous flower-stems, though only a few inches in height, and the leaves are utterly out of proportion to the size of the flowers. In habit and colour it resembles the others, and it seems to have an equally robust constitution.

Obituary.

— M. ANDRÉ LEROY, the well-known pomologist of Angers, died in that city on July 23rd. M. Leroy was probably the first pomologist in Europe, and his contributions to horticultural science and literature are numerous and weighty. His personal character endeared him to his friends, and his extensive knowledge was ever at the service of those who consulted him.

— MR. JOHN STANDISH died at Ascot, on July 24th, in his 62nd year. He was born on March 25th, 1814, and commenced his career in the famous gardens at Bowood, his father having been forester to the Marquis of Lansdowne; afterwards he became foreman, under Mr. Toward, in the gardens of the Duchess of Gloucester, Bagshot Park. Here he hybridised *Rhododendron catawbiense* with a scarlet variety of *R. arboreum*, and produced *R. Blandyanum* and many other fine kinds. About 1839, shortly after *Fuchsia fulgens* was introduced, he startled the world by producing a hybrid between that species and *F. globosa*, which was called *F. Standishii*; this obtained for him the friendship of the late Dr. Lindley, and introduced him as a nurseryman to the gardening world. Subsequently new plants, Rhododendrons, &c., engaged his attention for some years, until in 1846 he was joined in partnership by Mr. C. Noble, and Messrs. Standish and Noble became the agents to receive and distribute the magnificent introductions from China of Mr. R. Fortune. This partnership was dissolved in 1856; and in 1862 Mr. Standish removed from Bagshot to the Royal Ascot Nursery, where new Grapes, Strawberries, Peaches, &c., as well as the Japanese plants brought home by Mr. Fortune, have all combined to render his name a household word amongst gardeners. His last triumph was the production of some hybrid Peas, which, it is believed, will prove a valuable legacy to gardeners. And now he is gone, his manly presence, geniality, and disinterested generosity, will be sorely missed among his colleagues.

— MR. THOMAS TAYLOR, of the firm of Webber and Co., Covent Garden, died on August 15th, in his 67th year. He had been connected with Covent Garden Market for over thirty years; and was a prime mover in the formation, about 1854, of the British Pomological Society, and an original member of the Fruit and Vegetable Committee of the Royal Horticultural Society, on which he sat till quite recently.





W.H Fitch del.

Lilium.

Chromo. G. Severeys Brussels.

1 Humboldtii 2 Pardalinum 3 Californicum

GARDEN LILIES.—CHAPTER IX.

WITH AN ILLUSTRATION OF *LILIUM HUMBOLDTII* AND ITS ALLIES.

OUR plate represents three forms or species of Lilies, which have, within the last few years, found their way from California into our gardens, and which promise to become good and useful introductions as ornamental border-flowers. The specimens figured were exhibited at South Kensington last summer, by G. F. Wilson, Esq., from his Lily-garden at Weybridge. Two of them, *L. Humboldtii* (fig. 1) and *L. pardalinum* (fig. 2), from the same collection, had been awarded First-class Certificates in 1872 by the Royal Horticultural Society. *L. californicum* (fig. 3) is, as will be seen, deeper-coloured than the other two.

17. *LILIUM HUMBOLDTII* (*Gartenflora*, t. 724; *Flore des Serres*, tt. 1973-4). A very fine and handsome Lily, quite distinct in character from *L. canadense*, as a reference to our plate published with Chapter VIII. (p. 157) will at once show. The stems grow from 5 ft. to 6 ft. high, and are of a purple colour, with a slightly glaucous bloom. The leaves are all whorled, each whorl consisting of from nine to fifteen sessile linear-lanceolate acute leaflets, which are wavy or smooth on the margins; the lower ones 3 in. to 4 in. long, by an inch broad. The flowers vary from six to fourteen on a stem (thirty to forty, arranged as a pyramid, according to Roezl), and are axillary in the upper bracts, which are short and ovate, the inflorescence forming a kind of raceme. The perianth segments are from 3 in. to 4 in. long, revolute almost to the base, where they are slightly lamellate-papillose; they are of a rich orange-yellow in the upper half, while the lower half is thickly dotted with unequal, irregularly-disposed spots of a deep blood-red colour; these spots have sometimes a tendency to become ocellate, as in the sub-joined variety. The stamens are shorter than the perianth, but much protruded, in consequence of the segments being reflexed, the filaments 2 in.* long or more, with anthers of a reddish-brown colour, and about half an inch long; the style is about the same length as the stamens. The flowers are produced about the end of June or the beginning of July.

This beautiful Lily was discovered by Mr. Roezl, in a wild valley amongst the Sierra Nevada Mountains, in California, and to him we are indebted for its introduction into European gardens. It has been described by Dr. Kellogg, under the name of *L. Bloomerianum*.

L. HUMBOLDTII *OCELLATUM*.—This very beautiful variety, which is of Californian origin, has been named *OCELLATUM*, from its eye-like spots. It is the *L. Bloomerianum ocellatum* of gardens, and was introduced and distributed by Mr. Bull, of Chelsea. We saw it very nicely flowered, last July, in Mr. Wilson's collection, and from this plant the accompanying description is taken. It is of a more dense and stocky habit than the typical *L. Humboldtii*. The stem in the specimen

At p. 157, the filaments of *L. canadense* are by an oversight erroneously described as 4 in. to 6 in. long instead of 1½ in.

referred to was about 3 ft. high, of a purplish hue below, and marked with black lines. The densely-set leaves were all whorled, from nine to fourteen, sessile, oblong-acute, dark green, slightly recurved at the tip, and they were arranged in two or three series forming broken whorls. The flowers, four in number, were placed in the axils of the upper bracts; they were larger than in *L. Humboldtii*, of a rich tawny orange, spotted nearly up to the tip with large spots (one-eighth of an inch across), the larger and upper ones being crimson, with a black dot in the centre of each. The perianth segments were broadly-oblong, terminating in a shortish and somewhat acute point. The anthers were of a brownish orange colour. Like the species, this blossomed early in July.

18. *LILIUM PARDALINUM* (*Proc. Calif. Acad.*, ii. 12, with fig.).—This fine showy Lily, named *L. pardalinum* by Dr. Kellogg, bears considerable resemblance in its general aspect to *L. Humboldtii*, but differs in its pallid stems, less distinctly whorled leaves, and also in the deeper colour of the flowers. Its erect stoutish stems grow from 5 ft. to 6 ft. in height, and are everywhere of a pale green colour. The leaves are alternate below, and whorled above, or in some of the forms—*e.g.*, that which is cultivated under the name of *L. Robinsonianum*—everywhere alternate. In the usual forms, the lower leaves are spathulate or oblong-obovate, narrowed to a bluntish point, and 3 in. to 4 in. long. In some of the plants the leaves are more lance-shaped, and from 4 in. to 5 in. long. The whorls are from eight to ten-leaved in the cultivated plants, and here and there half-whorls of three or four leaves occur. The stem appears to terminate in a tuft of leaves more or less separated, and from the axils of these leaves, on long pedicels, the flowers, three to five in number, proceed, sometimes all standing nearly on the same level in a subumbellate manner, sometimes (when the leaves are more scattered) issuing from the axils of the upper leaves and forming an irregular corymb. The flowers have the perianth segments, lance-shaped, bluntish, and strongly revolute, the lower half of a deep orange colour, densely spotted with blood-crimson, and slightly lamellate-papillose, and the upper half unspotted and suffused with a sanguineous red; the upper spots, which occur on the lower borders of the portion coloured red, appear as if set on a small circle of yellow. None of this ocellate spotting occurs in *L. Humboldtii*; the stamens and style are much the same as in the species just named, the anthers being four or five lines long, and the pollen of a brownish orange. This, as well as the two varieties named below, are natives of California.

L. PARDALINUM ROBINSONIANUM.—This is simply a larger-growing form of *L. pardalinum*, from which it varies very slightly. In all the plants we have seen cultivated under this name, the pale green stems and alternate-lanceolate leaves have been well-marked features, while in the colour of the flowers the tint of sanguineous red pervading the upper half of the perianth segment is deeper, and the ocellate spots (dark spots on yellow ground within the red portions) are more distinct.

L. PARDALINUM CALIFORNICUM.—This Lily was originally collected by Hartwe

in California, and is a distinct and handsome form. Mr. Wilson's plant, from which our figure is derived, grew from 4 ft. to 5 ft. high. The stem was green, bearing the leaves alternate below, and whorled in the upper parts, the whorls being seven to ten-leaved. The leaves were sessile, spathulate-oblong or elliptic-oblong, the upper ones lanceolate and undulated. The flowers grew two or three from the upper whorl of leaf-like bracts, and two or three others from the axils of the uppermost leaves. The flowers were much like those of *pardalinum*, but richer-coloured, the perianth segments being of a rich tawny-yellow on the lower half, thickly marked with blood-red spots, while the upper half was of a clear reddish-crimson, a few of the upper spots within the range of the crimson ground-colour being surrounded by a ring of yellow. The anthers bore pollen of a brownish orange.

Our plate abundantly shows that in these three Californian Lilies we have some of the most showy of modern introductions amongst our bulbous-rooted garden flowers.—T. MOORE.

THE GLEICHENIA.

THE *Gleichenia* is a most beautiful genus of Ferns, and it may be added, a most useful one too, for the different sorts are not only a welcome addition in making up cut flowers—especially when large vases have to be filled, their fine fronds having then an opportunity of displaying themselves to much advantage—but they are also most effective for decoration and exhibition purposes when well grown. A good specimen tells well either in a collection of ferns or of foliage plants. We sometimes hear that they are thought to be difficult to cultivate, but in my own experience I do not find this to be the case. They are, it is true, liable to failure, as, indeed, are any other plants, especially if the start is not made with good healthy stock; in fact, in that case a good specimen cannot be produced unless it be by mere chance.

Mr. Shuttleworth, of Preston, is one of the most successful growers of this group of Ferns, his specimens being very large; and I believe he finds no difficulty in cultivating most of the kinds. Those that are natives of Australia, Tasmania, New Zealand, and New Caledonia, he grows in a cool house, and they are potted in a compost consisting of little else than fibrous loam. I must say that I never saw plants looking more vigorous than these, and at the exhibitions of this year they have been models of perfection. They are exceedingly well adapted for carrying to an exhibition, as they seldom suffer from the cold. To grow them successfully they must be kept during winter in an intermediate house, where the temperature ranges from 45° to 50°, and in summer in a cool house, or conservatory, shaded from the sun. The soil to be used is good fibrous peat and loam mixed with sand, and they should be potted in shallow pots or pans, well drained; if put in deep pots, they do not root deeply, as they prefer a good surface of soil for their creeping rhizomes to spread over. It is a good plan to raise the soil in the centre, so that the rhizomes may have a chance of descending over it. They require a liberal supply of water when in a growing state, but

as stagnant moisture must not be allowed to remain about the roots, they must have good drainage, so that the water may pass off quickly. On the other hand, they should never be allowed to get dry at the roots, as this extreme may kill them, or if it does not, the fronds will shrivel and the plants will become unsightly.

The propagation of *Gleichenias* is effected by division when the plants are in vigorous growth; they must be kept shaded from the sun, and be kept free from insects, such as scale, thrips, &c., which are liable to infest them if they are not kept in a healthy state.—B. S. WILLIAMS, *Victoria Nursery, Holloway*.

EARLY TOMATOS.

DO not know a more profitable crop than Early Tomatos. They require so little attention, and are so difficult to destroy by ordinary treatment. The wonder is that they are not more plentiful in the spring and early summer months than they are. The fruit is used in so many different ways, that if more attention were given to their culture very different results than those we now commonly see would be realised. The present is a good time to plant for spring crops. If the plants are raised from cuttings they do not grow so freely, but they produce fruit earlier than if grown from seed. I prefer growing them in pots, filled with fibrous loam and well-rotted leaf-mould. When they are in their permanent quarters, the roots may be allowed to grow through the bottoms of the pots, and the plants will thrive and bear fruit up to the following winter if necessary.

As regards training, single stems, from which all the laterals are rubbed off as soon as they appear, offer the most simple way of treating them, and they should be allowed to run as far as they can find head-way. We have had fine fruit ripe in March, the pots having stood on bricks over the hot-water pipes in vineries; and having been well fed with manure-water, the same plants have yielded abundantly throughout the season. In newly-planted vineries, where grapes from "supernumeraries" are not really essential, Tomatos trained between the rafters as cordons, and kept within bounds so as not to injure the vines, will give returns many times more valuable than those from the temporary vines. In an early vinery here, with Tomatos planted between the young vines, we have had excellent crops since April, and they are now bearing as abundantly as ever.—M. TEMPLE, *Blenheim*.

CYPRIPEDIUM JAPONICUM.

FEW plants can compete with this in the combined qualities of hardiness, beauty, singularity, and rarity. Till bloomed last spring by the New Plant Company, it was only known in this country by drawings which bore so little resemblance to other known Lady's-Slippers, that some hesitation in accepting them as genuine representations was not only pardonable, but justifiable. The annexed sketch, for which we are indebted to the Company above named, and which has been prepared from fresh flowers, leaves no further room for doubt. *C. japonicum* may now be accepted as a fine hardy perennial,



CYPRIPEDIUM JAPONICUM.

with a most remarkable and unique style of growth, and very handsome flowers besides.

The creeping flexuose rhizome is as thick as a quill, beset here and there with scales, and emitting numerous roots. The shaggy stems are erect, about a foot high, bearing a pair of sub-opposite rhomboid-ovate, repandly-undulate, and strongly plicate leaves. The flower is solitary and terminal, protected by a lanceolate bract, the lanceolate-acuminate perianth segments being of a greenish hue, speckled with reddish dots, while the drooping lip is whitish, suffused with pink.

The New Plant Company state that this *Cypripedium* is of very easy culture. The soil found most suitable is a light sandy loam, and the plant should be kept rather dry in winter, and be watered freely while growing. This applies to pot-culture. Out-of-doors, in a prepared border, in a cool, shady spot, and which was never suffered to become dry during March and April, they have been found to succeed well.—T. MOORE.

CARNATIONS AND PICOTEES.

SIXTEEN years have rolled away since, after a yet longer residence in the Midlands, I returned to the neighbourhood of London, and yielding to the force of circumstances I could not control, gave up—albeit most reluctantly, and like Lot's wife, with many a wistful look behind—the cultivation of my favourite flowers, the Carnation and Picotee.

A slight mitigation of these untoward circumstances last spring enabled me to return to my cherished recreation, though on so small a scale that I should smile to describe myself a cultivator. Nevertheless, as I grew forty of the best varieties, or supposed to be the best varieties known, had the advantage of a visit to my friend Mr. Charles Turner's collection at the Royal Nursery, Slough, was present on August 13th at the revived exhibition of the National Carnation and Picotee Society at Manchester, and inspected one or two collections of the Yorkshire growers, I am assured, probably by over-partial friends, that a relation of my experience will be interesting; and therefore, Mr. Editor, with your kind permission, I will proceed to describe it.

Sixteen years, half the life-time of a generation, is a large epoch in a human life, but a far more important period in the life of a Carnation or Picotee, few varieties having stamina to carry them beyond twelve or fifteen years. Yet, upon my inquiry for my well-remembered favourites, I was greatly pleased to find *Admiral Curzon*, S.B., *Dreadnought*, S.B., and *Sir Joseph Paxton*, in the same class, yet lived, and not only lived, but maintained their pre-eminence almost undisputed. To these I added *Premier*, P.F., *Squire Meynell*, in the same class; *John Bayley*, S.F., and *Sportsman*, S.F.; and not only were these varieties good, but, I am happy to say, they came in a character—save only for size, which was due to the thin, poor soil I alone could command—for quality and beauty of marking I had never seen surpassed. *Jenny Lind*, C.B., and *Falconbridge*, P.B., were also among my old favourites, but neither, alas! retained the position which

was theirs of right in the days of yore. Of Rose-flakes, not one of those which delighted our eyes and held pre-eminence sixteen years since retained its position; and *John Keet*, a variety quite new to me, was assigned the first place, and I am bound to say, from my experience, fairly merits it.

In Picotees one only, *Mrs. Dodwell*, red, heavily edged, a variety my friend Mr. Charles Turner did me the honour to name after my wife some twenty years back, remained, and I am pleased to say had added excellence to its style by the lapse of years.

These were the old varieties I grew, and I am delighted to say, excepting only the two I have named above, they fully came up to their well-remembered beauties. When living at Derby, I was frequently told Curzon did not develop the character in the South which belonged to it in the locality of its origin, statements which, coming from the sources they did, I was bound to give credence to; but I am happy now to be able to assure any of your readers inclined to enter upon the cultivation of these beautiful flowers, that there is an exception to this, for though my stock—one pair only—was so limited, Curzon bloomed in a character I had never known surpassed, even though I had grown thirtyfold more in number. *Dreadnought* also, a seedling from, and sometimes so closely following the style of Curzon as to be indistinguishable from it, though at others markedly distinct, was as fine in character as the first year I bloomed it, when sent to me as an unproved seedling. *Premier*, P.F., *Squire Meynell*, P.F., *John Bayley*, S.F., and *Sportsman*, S.F., I have already referred to. *Mayor of Nottingham* (Taylor), a purple-flake, singularly beautiful as an unnamed seedling in '58 and '59, had fallen off; yet, nevertheless, it is a variety that should be grown in the most limited of collections.

Of varieties of Carnations previously unknown to me, I grew *Mars* (Hextall), S.B., a variety raised, in the last years of his green old age, by my dear departed friend; two seedling Crimson Bizarres, *Eccentric Jack* and *Lamplighter*, raised by Mr. Wood, of York; two seedling Pink Bizarres, raised by Mr. Thomas Bower, of Dirkhill, Bradford, as yet unnamed; and *John Keet*, rose-flake.

Mars is a seedling from Curzon, the habit of growth of which it follows, is full of rich distinct colour, and must be grown by every one who values distinctness and first-class quality; nevertheless, it is rather a break back from Curzon than a step forward, showing to those who can remember it—alas! how few remain who can—the qualities of Curzon's parent, Walmsey's William the Fourth, rather than the pure white and brilliant colours of Curzon. The excessive moisture of the blooming-time was undoubtedly prejudicial to the development of pure white grounds and distinct markings, and we may expect in an average season to escape these drawbacks. But I am bound to set this down, or make myself, what I never yet was, an unfaithful chronicler of my impressions. The two varieties of Mr. Wood's are both good, *Eccentric Jack* having the best-formed petal, and *Lamplighter* the more vivid colours.

The two seedlings sent me by Mr. Bower are singularly novel and very

distinct, having a pink marking, bizarred with marone. No. 1 is the deepest in colour, but is not nearly so much to my taste as No. 2, which has a beautifully-formed petal, very distinctly marked on a clear white ground with a pale pink, bizarred with delicate marone. Altogether it is quite a lady's flower. *John Keet* is a grand rose-flake, beautifully marked with rose on a pure white ground, the petals possessing great substance and smoothness. It reminds me of the old and famous variety, May's Lorenzo.

As I have already stated, with one exception, my Picotees were all novel, and it was with no little interest I watched their expansion. Truth compels me to add that my eager expectations were not fulfilled, and had my experience been confined to my own garden, I should have remained a disbeliever in any progress in this class. Fortunately, my visit to the Royal Nursery, and subsequently to the North, dispossessed me of this feeling, and I saw enough to assure me that I must attribute to accidents of season and of culture what before-time I had feared indicated retrogression.

The Red-edged class was in great force, the broad edges being especially remarkable. But for an occasional slight suffusion of colour into the white, the first in place, as in honour, was the *Princess of Wales*, but *Leonora* was so good, the solid marking breaking off so distinctly from its lovely ground of white, that she was a worthy competitor even of the Princess. *J. B. Bryant*, which at its opening seemed somewhat to lack refinement, improved greatly upon acquaintance, and deserves a place in every collection. *Mrs. Dodwell*, as I have already said, fully maintained the repute with which she was introduced to the Picotee-grower twenty years since, a strong proof of the excellence of stamina in this variety. Light reds were not so good; neither *Mrs. Hornby*, *Mrs. Bower*, nor *Mrs. Keynes* came up to my ideal of a light edge, though each had points to make them indispensable to the cultivator; but I subsequently saw *Mrs. Hornby* at the Royal Nursery so distinct, and *Mrs. Bower* in Yorkshire in such character, that without attempting to define their respective places, I can declare each to deserve high encomium. In the narrow or medium edges, *Wm. Summers*, a flower of Mr. Simonite's, was quite to my taste—all that is desirable in quality, form, and formation of petal. Two other heavy-edged reds I saw, in first-rate character, are *Peeress* (Turner), a variety much in the way of, and doubtless a seedling from, King James, but a great improvement on that good old variety, indispensable for the home stage; and *John Smith* (Bower), a seedling, apparently, though different in colour, from the Princess-Alice strain, good alike for exhibition and home use.

In heavy-edged Purples, *Alliance*, *Chanticleer*, and *Norfolk Beauty*, three varieties raised by Mr. Fellowes, are distinct and good, and should be in every collection. Had *Norfolk Beauty* the fine white ground and substance of petal (it is very stout) of *Mrs. Summers*, it would leave nothing to be desired. As I saw *Mrs. Summers* in the North, I find it difficult to give the palm to either, so nearly are their claims to pre-eminence balanced. I venture to predict that whoever succeeds in crossing these varieties will be richly rewarded in the issue,

and live long upon the tongues and in the memories of florists. Alliance is a fine narrow-edged heavy, with great breadth of petal; and Chanticleer, remarkable for its broad band of bright colour, most effective for the home stage, will often be found of great use for the back-row of a twelve on the exhibition-table. Light-edged purples with me were sadly behind the superb flowers I had once grown, but this, as I have already said, appeared to be due to the accidents of the season or culture. *Mrs. Little*, suffering from a chill in early spring, never recovered the robustness requisite to produce a really fine specimen. *Mary* was so suffused with colour at the back of the petal, that the ground was lavender rather than white; and *Ganymede*, chaste and pure as it was, lacked the size and breadth of petal a leading flower must possess. Yet each of these varieties, even as seen in my garden, were interesting; they fell off only in the splendour and magnificence of bloom I had been accustomed to get from Amy Robsart. In the North I found *Mary*, *Ann Lord*, an unnamed seedling of Mr. Simonite's, and another of Mr. Bower's, with all the characteristics of that fine old variety, and gladly recognised that my brother florists had not gone back in their vocation.

In the rose and scarlet-edged class, I grew *Empress Eugénie* and *Mrs. Allcroft* in light edges, the latter a seedling from, and a decided improvement on, the Empress; both good. *Ethel* (Fellowes), medium-edged rose, very bright, and very beautiful. *Juliana*, a heavily-edged scarlet, the best of its class. *Mrs. Fordham*, rose, medium edge, large and full, the centre petals a little too crowded and too small, yet nevertheless a most attractive variety; and *Obadiah*, the latter a heavily-edged scarlet, but sadly too serrated on the edge of the petal to please me. To these in the coming season I shall add *Edith Dombain* (Turner), rose, heavy-edged, occasionally apparently inclined to bar, yet nevertheless indispensable; *Miss Wood* (Wood), medium, sometimes a heavily-edged scarlet; *Regina* (Fellowes), rose, heavily edged; *Fanny Helen* (Niven), a variety I saw in the North, small, but very pleasing, a bright rose; and *Mrs. Lord* (Lord), heavy rose edge, the colour rather too faint, but of good quality, and without the slightest spot or bar. Other flowers I saw fine in the North were a light-edged red seedling (*Clara*) of Mr. Bower's, very distinct and promising. Mr. Bower had also a beautiful rose-flake, a splendid variety, worthy to contest pre-eminence with John Keet. At Manchester, Mr. Simonite had in his stand a very beautiful light-edged red (the same variety taking first prize in its class), a light purple, and a narrow-edged heavy rose, the latter as shown pale in colour, but faded apparently from age. Mr. Lord showed two seedlings—No. 24, a narrow-edged heavy purple, since called *Alice*, a variety from which I anticipate great things; and No. 14, bright rose, heavy edge, very pleasing and promising. At the same place I noted a scarlet flake, new to me, *Clipper* (the raiser's name I did not get), which I think is likely to be inquired for; and *Annihilator*, S.F. (Jackson), as shown in the first stand of three, deserved high encomium.

At the Royal Nursery which I visited on the 26th July, a few days too late to see the flowers at the culminating point of their beauty, I noted, in addition

to those I have before referred to, in Scarlet Bizarres, *Campanini* (Turner); in Crimson Bizarres, *Albion's Pride* and *Marshal Ney*, two varieties of Mr. Headley's, than whom no florist has laid his brethren under greater obligation; *Lord Milton* (Ely); *Lord Raglan* (Bower), the latter a very distinct and showy variety, very full of colour and bright marking; and *Rifleman* (Wood). In Pink and Purple Bizarres, *Sarah Payne*. In Purple Flakes, *Ajax* (Hextall) and *Juno* (Baildon). In Scarlet Flakes, *Annihilator*, already referred to, and *Superb* (Ingram); in Rose Flakes, *James Merryweather* (Wood), *Sybil* (Holmes), and *Mrs. Frederick Burnaby* (Turner). The latter will, I fear, find little favour amongst Northern florists, its colour being pale, but it is one of the sweetest varieties for the home stage I have ever looked upon.

All these I propose to add to my stock, and with these, I believe, I shall possess a collection which can scarcely want any desirable feature, or leave out an especially deserving variety. I was delighted to learn from Mr. Turner that the current of popular favour was running largely in the direction of the Carnation and the Picotee, and from long experience I am well assured no flowers will better repay the suburban cultivator. To the ardent florist, all flowers—I might almost say, all things in nature—are a delight, but conjoined to intrinsic qualities not to be excelled, the Carnation and Picotee possess the yet further great recommendation that they will grow, and grow luxuriantly, where other species die or dwindle; and whether in the full growth and bloom of summer, or in the repose of winter, the beauty of their foliage and variety of their habit afford alike an interesting subject for study, and a pleasant rest for the eye.

My remarks have extended to such a length that I must defer some observations I had proposed to offer on the Manchester Show for a future opportunity, supposing, Mr. Editor, you will grant one [which we shall be happy to do]; but I cannot close without recording my sense of the admirable order and high organisation evidenced at the Royal Nursery, Slough. Many years have passed since my visits to these famous grounds were of annual, or almost annual, recurrence, and it is plain to see that in the interval our esteemed friend has fully maintained his place as the foremost cultivator of the day. Turn which way he may, the thoughtful observer will note provision for every exigency, and see in every department practice of the highest art based upon the soundest principles. Of the princely hospitality dispensed by Mr. and Mrs. Turner, I may only say it adds an additional zest to such a day's enjoyment, and express a hope that both host and hostess may long be spared to rule over such a Royal establishment.—
E. S. DODWELL.

USEFUL FLOWERS FOR TABLE DECORATION.

E must now accept Table Decoration as a confirmed institution in most families. Time and taste work great changes, and among others that of doing away in many places with plants of all descriptions as heavy and unsuitable for the table, and of substituting flat decorations of various

kinds which may be thought suitable, adopting such material, through the season, as circumstances may bring to hand. Among stove plants, *Achimenes*, *Allamanda*, *Bougainvillea*, *Clerodendron*, *Dipladenia*, *Gloxinia*, &c., are more or less employed, but of these by far the best are *Allamanda* and *Dipladenia*. They can, if plentiful, be used in threes or fives, on some suitable leaves, so as to form a cluster; they can be laid in twining lines of design all round the dishes, if there is a chance of obtaining some long sprays and bunches of the *Bignonia Cherere*; if not, the latter itself is good, as some of the sprays can end by being twisted round the candelabra, and fixed there with a piece of silver wire. *Dipladenias* also are fine objects for this purpose; and I hope to have some of the new *D. Brearleyana* for another season; these grown up the roof of a stove, or in a conservatory with extra root-room, afford a great amount of bloom during the greater part of the season.

Many of the stove ferns, or some of the richly-coloured leaves, neatly placed, make a good night's change now and then. *Azaleas* are excellent, and to take the remaining bloom upon a plant which is going off, will be no sacrifice; but I may add that we consider it no sacrifice here to gather and use any of these different flowers for this purpose, because they are gathered up as soon as possible, and put in water to use for the rooms next day. *Bignonia grandiflora* is very telling laid in threes on the cloth alone; the colour adds a great amount of richness or lustre when used with silver and white dishes. Of *Rhododendrons*, all red sorts are good, as are many of the outside shrubs, and many hardy spring and wild plants.

Roses, of course, are always acceptable in any form. A short time ago we covered a table for twenty-five entirely with *Roses*, taking a row inside the plates; the fruit-dishes were of our own doing, and round these inside were one and two rows of *Roses*, the fruit being put on leaves; above, these dishes were covered outside, or say packed up, to meet those on the table. The sorts used were *Baronne Prévost* and *Duchess of Sutherland*; except the different colours of the fruits, it was one mass of rose and white silver, no dishes being seen. The *Roses* were full blown, and were in bottles next day by noon, in the form of rose-water. Wreaths of *Roses*, or *Roses* laid in a serpentine fashion, or in stars round the dishes, afford a good change. The *Clematis*, again, is good, as it shows well against white, and can be hung or finished in very graceful forms, as well as festooned amongst other things.—J. FLEMING, *Cliveden*.

THE NEW ROSES OF 1874-5.

IN the autumn of 1874 no less than 70 varieties of New *Roses* were announced by the French rosarians. As I have seen the greater part of these varieties in flower, either in the grounds of the raiser, or in my own nurseries, I have thought it may be of some service to intending purchasers to give a brief description of such as have pleased me best, or have been recommended to me by those in whose judgment I have reason to confide.

And first, of the Hybrid Perpetuals. *Amélie Hoste* is a large, full, and nicely-shaped flower of a flesh-tinted rose-colour; very distinct and promising. *Antoine*

Mouton is a very large, full, and finely-formed globular flower, of a bright rose-colour, the reverse of the petals silvery. *Arthur Oger* is one of those deep velvety purplish-crimson roses, in the Gloire de Ducher style; the flowers are very large and full. *Bernard Verlot* is something in the way of Lord Raglan, the flowers being a scarlet-crimson, shaded with violet-purple, but the form is more globular. *Casimir Perrier* has dark ruby-red flowers, shading to light red, and possesses the grand quality of blooming constantly. *Comtesse de Rocquigny* is a pretty and free-growing rose; flowers white, tinted with salmon, not large, but of perfect globular form. *Comtesse de Serenzyi* bloomed grandly here under glass, its large globular flowers, pink shaded with rose, attracting general attention. *Gonsoli Gaelano* is distinct and pleasing; the flowers are glossy white, slightly tinted, large and full. *Hippolyte Jamain* is good; the flowers are bright rose, shaded with carmine, large, full, and globular. *E. Y. Teas* is a large rose, the colour deep cerise-red, bright and striking; the flowers are globular, full, and well formed. *La Rosière* is also a large, full, and well-formed flower, amaranth, shaded with bluish-black. *La Souveraine* is a fine bold flower, much in the way of Madame Clemence Joigneaux, but more double. *Madame Lefebvre de St. Ouen* has bright cerise-red flowers, large, full, free, and sweet. *Madame Rougier* is a large full rose of cupped form; the colour is glossy rose. *Mdlle. Claire Matthieu* is a rose-coloured flower, promising to be a free and showy garden rose. *Marie Cordier* is a large well-formed flower; colour deep carmine, illuminated with fiery red. *Mariette Biolly* is a good garden rose, fresh in colour, large and full. *May Turner* is a very large rose, full, and of good form; the colour is salmon-rose. *Princess Antoinette Strozio* has bright rose-coloured flowers, which are large, full, and well formed. In *Souvenir de Mons. Fontaine* the flowers are large and full, bright red, the base of the petals shaded. *Souvenir du Baron de Semur* is a fine colour, velvety-purple shaded with fiery red and black; the growth is not vigorous here. *Villaret de Joyeuse* stands well among the novelties of this year; the flowers are rose shaded, large, full, and finely formed. There is one Perpetual Moss—*Soupert et Notting*—a bright rose-coloured flower of the size and shape of the old Cabbage Rose, bearing more moss than some of its congeners.

There are also some Tea-scented Roses with which I am more than satisfied. *Aline Sisley* is a full well-formed violet-red rose, a colour new and much wanted in this section. *Comte de Sembui* produces coppery-salmon flowers, which are large, full, and finely formed. *Jean Ducher* is salmon-yellow, the interior of the flower shaded with peach-colour; this is a large, full, and free-flowering globular rose. *Madame Bonnet Eymard* is white, with yellowish centre, not large, but full, and very free. *Madame Devoncourt* produces nicely-formed flowers, of a pale straw-colour. *Madame Thérèse Genevay* has flowers of a rosy-peach colour, large, full, cupped, and free. *Marie Guillot*, as a white rose, slightly tinged with yellow, promises well; it is large, full, of good form, hardy, and free. *Marie Opoix* is another white, with yellowish centre, sometimes tinted with pink; also of good form. *Perle des Jardins* flowered finely here; the colour is canary-yellow;

large, full, well-shaped, hardy, and free. *Shirley Hibberd* is new in colour—nankeen, and flowers freely. *Thérèse Loth* bears rose-coloured flowers, with a brighter centre.

The above include the varieties which most favourably impressed me in this their probationary state, but I do not wish it to be inferred that I condemn those which I have left unnoticed. Neither do I pass any opinion on the English seedlings, because they are open to inspection by any one who may be inclined to visit them in the nurseries of the raisers. I may say, however, in conclusion, that I think this year has produced more than the average number of really good new varieties.—WILLIAM PAUL, *Paul's Nurseries, Waltham Cross, Herts.*

GARDEN WORK FOR OCTOBER.

FLOWERS.

THE fine genial weather we have experienced during August and September has greatly improved our flower-gardens, bringing out a gay display of flowers which, considering the strength the plants had attained previous to blooming, is likely to be continued with fine genial weather until late in autumn. However, we may now expect sharp frosts, and must be prepared to remove all tender plants at once, for when they are allowed to get frost-bitten they do not winter so safely. As soon as any of the beds become shabby they should be cleared, and after the middle of the month planted with *Bulbs*, *Perennials*, or *Evergreens*. The latter answer best in places where a display is only desired during the winter months; otherwise, a preponderance of one class of plant is not so enjoyable, and a judicious blending with spring-flowering plants, so as to create variety, will prove most satisfactory. *Pelargoniums* when lifted, more particularly the tender variegated sorts, should have the roots and tops freely trimmed and be potted into small pots, afterwards starting them in a slight heat until established; by this means they make finer plants than if allowed to remain inactive throughout the winter. Lift *Carnations* that are grown in borders for blooming in pots; after repotting, stake and tie, and place them in a shady situation for a short time; guard against over-potting, and after they are established for a few days, place them in a light, thoroughly ventilated pit, near to the glass, when they may be brought into bloom in batches as required by introducing them into a slight heat, as the bloom-buds should now be prominent.

Violets should now be removed into frames for winter-blooming, filling up between them with friable soil to within 1 ft. or 16 in. of the glass; be careful to remove them with as much of the roots and of the balls of soil attached as possible, and plant firmly, placing them moderately close together. The Neapolitan may be packed as closely as the balls will admit of, but strong varieties, as the Czar and Victoria Regina, with large leaves, must be set wider apart. By solid planting we encourage the production of flowers, as under restricted cultivation with glass, more particularly with the strong-growing sorts, there is a tendency to over-luxuriance at the expense of blossoms.

Herbaceous borders should now have a thorough clearing, removing decaying annuals, &c. Amongst the hardy perennials now in bloom, the varieties of *Anemone japonica* are very effective; the white kind, *Honorine Jaubert*, being one of the most desirable border plants, as it makes a most effective display, and remains for such a length of time in bloom.

Evergreens that are now transplanted will quickly establish themselves; it frequently happens that such as are removed now will stand a severe winter the best. Turfing, and other repairs upon lawns may now be done, keeping the grass and walks cleanly swept and rolled, for without assiduous attention at this season of the year, anything like order or neatness is not possible.

Conservatory: Let all roof-climbers be now kept within as limited bounds as possible, as it is necessary to admit as much light into the interior as possible, keeping the plants as thin and fully exposed as is consistent with effectiveness. *Bouvardias* will now be serviceable here; and *Primulas* will be coming into bloom, as will also the earliest varieties of *Camellias* and of *Chrysanthemums*. Even at this season there ought to be no scarcity of flowering plants; and now that indoor plants are most appreciated, every effort should be made to have the conservatory as gay as possible. *Camellias* should now in a general way be kept as cool and airy as possible, giving an abundance of air both night and day; but by no means must they be allowed to suffer for want of water at the root; dryness in excess, either atmospherically or at the root, is conducive to bud-dropping. *Cinerarias* should now have the benefit of a light airy pit, and be kept near the glass; assisting those that are established in their flowering pots by constant applications of weak manure-water. Those that were struck early will now require shifting on, using a rich open fibrous compost; they must not be allowed to become pot-bound, but be shifted on as soon as the roots reach the sides of the pots, keeping them moist and growing freely. Fumigate to prevent green-fly, and keep under mildew by the use of sulphur. *Primulas* intended for autumn and winter blooming should at once be placed in a close pit, and kept near to the glass, assisting such as are throwing up flower-spikes with frequent application of manure-water. The young plants should have the blooms pinched out as they appear, and the latest batches shifted on as they require it, as they grow freely in a light airy atmosphere at this season.

Greenhouse plants should now be safely housed, and it will be necessary to keep the atmosphere as dry as possible by watering early in the day, giving all the air it is possible during fine weather. Attend to the tying of *Azaleas* and all plants that require it. *Soft-wooded Plants*, such as *Solanums*, that have been planted out during the summer, should now be lifted and placed in as small pots as the roots can be forced into, as the less growth they make after shifting the better they display their berries. Keep *Cyclamens* near to the glass, and carefully water them at the root. *Epiphyllums* and *Bouvardias* will now do best with a little heat, as they develop their blooms more freely in a genial temperature.

Stoves: Such plants as *Poinsettias* and *Euphorbias*, which are required for early blooming, should now be encouraged in a brisk growing atmosphere, using the syringe freely. Give attention to growing stock, and see that the plants receive no check, as plants that bloom in winter, as well as foliage-plants for decoration, must be kept healthy; whilst specimen-plants, and such as have matured their growth, will require a drier atmosphere, with less heat and less moisture at the root. Remove all roof-climbers that may exclude light, and promote the ripening of *Achimenes*, *Caladiums*, tuberos *Begonias*, &c., withholding water as the leaves decay, when they may be stored away in a dry temperature of about 50°.

Forcing-house: Various plants will now require bringing forward, and must be introduced from time to time. The early-potted *Van Thol Tulips*, *Double Roman Narcissi*, *Roman Hyacinths*, &c., should now be introduced; keep the plants near to the glass, and guard against drawing as far as possible, by admitting air upon every favourable occasion.

Pelargoniums, such as are required for early blooming, should now have their final shift. Attend to growing plants, stopping-back as they require it, and re-potting cuttings as they progress, watering sparingly afterwards, until they are established. Keep under insects by timely fumigation.

Bedding Plants of all kinds should be freely exposed, as long as the weather is favourable, as they stand the winter much better when they are thoroughly hardened. *Calceolarias* should be propagated during the month in cold frames. *Carnations* should still be freely exposed, and late-rooted layers at once potted up. Prepare frames for the protection of all but hardy plants, such as *Echeverias*, *Centaureas*, *Pentstemons*, &c., and have protecting materials in readiness.—GEO. WESTLAND, *Witley Court*.

FRUITS.

Pines: All plants growing in dung-pits should now have the linings renewed, especially if the nights are getting cold; and the pits should be covered. Any plants intended for fruiting next season on ridges may be planted-out towards the end of the month, or as soon as a good bed of fresh leaves can be got together. See previous directions in regard to plants in fruit, &c.

Melons: If any melons remain yet to ripen in cold frames, keep them dry, and warm with sun-heat. In the case of late crops in houses where there is fire-heat, watering should be carried on very carefully, otherwise the plants may canker off; therefore it is best to water on the morning of a fine day.

Peach-house: As soon as the leaves are off in the early house, the trees may be pruned, cleaned, and tied-in. If the trees have become weakly from over-cropping or other causes, the inside borders should be forked over and surfaced with three or four inches of fresh loam and dung, and should afterwards receive a good soaking of water. This is a good time to renew the trees in any of the houses where required, and in so doing the soil should be partially removed, and replaced with fresh loam and rotten dung.

Vines: Still continue to give a little fire-heat in bad weather to grapes that are not properly matured. Also a little through the day in damp weather to those that are ripe, at the same time giving air to free the house from damp. Look over the bunches often, and remove all decayed and unhealthy berries. The vines in the early house may now be pruned, and if very early grapes are required, prepare to close the house by the end of the month.

Strawberries in pots: All runners should be cut away, and the pots freed from weeds; the plants being kept fully exposed and moderately dry, so that they may finish their growth before sharp weather sets in. Should a glut of wet take place towards the end of the month, the plants intended for the earliest forcing had better be laid on their sides.

Hardy Fruits: Nothing could be more favourable to the ripening crops of *Apples* and *Pears*, than the warm dry weather which we have experienced in this part of the country for some time past; therefore, it is likely that most of these will be ready for housing earlier than usual this year. All *Apples* may be gathered during the present month, leaving the latest till last. The same remarks apply to *Pears*, much care being taken in gathering the largest fruit. Gather *Filberts* and *Walnuts*, which must be well dried before storing. Expose late *Peaches* to the sun by removing the leaves; if the nights are frosty, use a slight covering. Continue to clean out all runners from *Strawberry*-beds, and get the ground about the plants forked over before the month is out. All kinds of *Fruit-trees* may be planted as soon as the leaf is off, or partially so; it is not advisable to remove them sooner, more especially large trees, as the leaves

will evaporate more moisture than the roots can supply, and the young shoots will be injured by shrivelling. Plant *Raspberry*-canes, and propagate *Gooseberries* and *Currants*.—J. POWELL, *Frogmore*.

VEGETABLES.

As is the month of September to the agriculturist, so is that of October to the horticulturist,—the harvest season. Many crops, not alone in the way of vegetables, should be taken up and stored away, or harvested, during the month. Where the *Onions* have not all been secured, this should now be done without delay. Other crops, such as *Carrots*, *Beets*, *Scorzonera*, *Salsafy*, &c., should also be taken up; but in the case of these we do not recommend that it should be done too early, as should the weather prove fine and open, there will still remain a little time for growth; besides which, the later it is possible to perform the operation, so much the shorter will be the time the various products will require keeping. In taking up, they should each be carefully handled, and divested of their leaves with as little injury as possible to the crowns. Cutting off the leaves should therefore be dispensed with, in the case of the *Beet* especially, as the necessary manipulation may be performed by simply twisting them off with the hands. In regard to the other roots referred to, this will be found more difficult, and it may be necessary to cut them across, in doing which, be careful not to cut the solid crown itself in any degree, as this invariably predisposes to decay. Such crops may, as is customary, be stored away in bins, and covered over with sand, or very dry open and gritty soil, but *Carrots* will keep equally well, if not fresher and better, clamped in the open ground, in precisely the same way as potatoes are clamped, and we have kept *Beet* in a similar way.

Large breadths should now be planted, in sheltered sites and thickly, of *Endive*, *Lettuce*, seedling *Cauliflowers*, &c.: these for the very early spring supplies; plant the *Endive* deeply. Both the *Lettuces* and *Endive* planted early last month, especially the latter, should now be tied up for blanching, or have some kind of protection placed over them, as the hearts are soon injured by slight frosts. Persevere in destroying all *Weeds* which exist amongst permanent crops.

Spinach, which is the most valuable of all winter crops, must be kept constantly hoed in its present young state. Take care to thin it out moderately, because if it be left at all thick at this season, the crop will become too weak generally to be able to withstand the frosts that ensue. Should symptoms of mildew exist on any—and it sometimes attacks it at this time—dust the beds over with lime or with sulphur. Where large seedling plants of *Cabbage* are in hand, it may not be too late to make another successional planting. Dig over all vacant ground as opportunity offers.—WILLIAM EARLEY, *Valentines*.

JUNIPERUS CHINENSIS AUREA.

THIS is a sport from one of our finest evergreens, the *Juniperus chinensis*. It occurred in the Milford Nurseries, near Godalming, where the parent plant is now growing. It is not a feeble side branch that has produced this extraordinary plant, but the whole of the top is golden yellow, which may in some measure account for the constancy of the variegation and the free growth of the plant. Mr. Young has a large number of young plants taken from this sport, varying in height from 6 in. to 5 ft., and not one of them shows any tendency to go back to the original green colour of the type, while they



appear to be quite as free in growth, and as robust in character as is their common parent.

I believe this novelty will produce a striking effect in borders, or when grouped on lawns, or introduced as single plants in ornamental planting. It certainly stands in the foremost rank of golden variegated conifers, and it will no doubt be extensively used when it becomes better known. The parent plant in the Milford Nurseries is about 11 ft. or 12 ft. high, at least 5 ft. of the top being variegated.—G. EYLES, *Eardley Crescent, South Kensington*.

LANE'S PRINCE ALBERT APPLE.

WITH AN ILLUSTRATION.

THE varieties of Apples are so numerous, and there are so many of first-rate quality, that the introduction of new sorts might seem to be a work of supererogation. In introducing a figure of LANE'S PRINCE ALBERT, we are not, however, bringing forward a novelty, but a variety which has been well proven in certain districts, and which well deserves to be more widely cultivated. It was raised some years since by Messrs. Lane and Son, of Berkhamstead, from the Russet Nonpareil crossed with Dumelow's Seedling, and is remarkable both for its excellent quality as a culinary apple and for its prodigious bearing qualities, even the smallest trees being usually densely laden with fruit.

The fruit is large, shortly conical or ovate, in the larger samples $11\frac{1}{4}$ in. in circumference, and measuring 6 in. from eye to stalk, even and regular in outline, with broad ribs round the crown. The skin is smooth, of a fine grass-green, covered with appreciable bloom, changing as it ripens to clear pale greenish-yellow, flushed on the exposed side with crimson-red, and also marked with short deeper crimson streaks. The eye is closed, with small, pointed, reflex segments, which are set in a deepish, somewhat angular basin. The stalk is about half-an-inch long, inserted in a deep, funnel-shaped cavity. The flesh is tender, juicy, briskly and agreeably acid, with a pleasant flavour.

In this variety, we have a culinary sort which can be safely recommended not only for its bearing and keeping qualities, but also for its general excellence, in respect to flavour and texture, regarded as a kitchen Apple. The fruit are heavy, and have a solid feel about them.—T. MOORE.

STEVIAS.

HERE are no plants more universal in their autumnal-blooming character than the members of the genus *Stevia*, and yet one may make the round of fifty gardens and not find a single representative out of its forty odd species in cultivation. It would not mend matters much were I to enter into a speculative inquiry why this should be the case; rather let me endeavour to point out wherein their value chiefly consists, enumerate a few of the obtainable species, and show how they may readily be cultivated. Possibly in considering the latter portion of the subject we may find out a reason for their scarcity.

The genus *Stevia* is an old one of Cavanilles, nearly all of whose representatives are natives of Mexico, where they enjoy a wide distribution, and are generally met with growing at considerable altitudes, though, of course, far below the line of strictly alpine vegetation. It belongs to the large natural order *Compositæ*, amongst whose 12,000 species it is referred to the section *Eupatorieæ*, and in popular parlance may be said to be a first cousin to the *Ageratums*, familiar to all as a well-known element amongst the bedding-out plants of the present day. They divide themselves into two sections,—the one consists of true herbaceous plants that die down annually to a remarkably short underground root-stock; the other of shrubby evergreen plants, much less hardy, and liable to perish with a few degrees of frost. Of the latter section I believe we have only two species in cultivation. In the former, or herbaceous group, there is so much similarity in growth and general character, that it will be better to preface its consideration in detail by a few general remarks that will be applicable to all, supplementing the same with a few distinctive characteristics by which the species may be identified. I have already said they have a remarkably short underground root-stock; from the lower portion of this proceeds a dense, tufty mass of hard, almost woody, deep-seeking roots, and from the upper part is developed a number of stems, rising to a height varying from 1½ ft. to 2 ft., well furnished with small linear or ovate leaves. The flowers are small, consisting of about a dozen florets, surrounded with a green involucre; an important specific variation arises from the dense or lax arrangement of these flowers, but under whichever arrangement they may occur, they are produced in such abundance that they give the plants a striking and graceful appearance, all the more effective seeing that their blooming period extends from August to the end of October, and even into the dull month of November, always excepting, however, that a severe autumnal frost does not mar their beauty.

S. Eupatoria has densely-massed heads of pink flowers; the stems thus terminated are also slightly pink, and furnished with short hairs; the leaves short and obovate; the whole plant of somewhat rigid growth. Flowers in August.

S. glandulifera produces scattered leafy corymbs of bright deep rosy flowers; the stems are not nearly so foliaceous as in the former species, and when growing vigorously the plant attains a height of 2 ft., or more; the leaves are almost ovate.

S. ivæfolia has light green, narrow, almost spathulate, leaves; each stem is terminated with a dense compact head of white flowers; these are produced in the early part of August, and are succeeded afterwards by secondary growths from the original stem, somewhat smaller, but similar in character. These are exceedingly useful as cut-flowers in the month of October.

S. laxiflora.—As the specific name very properly indicates, the flowers are in this plant widely distributed over branching foliaceous stems; they are of a purplish colour, but as raised from seed, are liable to assume a light lavender tint; their scattered arrangement renders them less valuable for bouquets, but in ordinary growth in the garden they are even more effective. This plant has a vigorous growth, attaining a height of nearly 3 ft., and blooms in September and October.

S. monardæfolia is perhaps the strongest grower of all the *Stevias*; the leaves are broadly cuneate, the stems branching at one-half their height into widely-spread leafy panicles, the flowers rosy tinted; produced freely. It forms a handsome border plant, flowering in September and October.

S. ovata has the stems numerous, the leaves broadly ovate, the flowers very lax in their arrangement—in tiny groups, nestling amid deep green leaves, reminding one of some of the *Galiums* in appearance. It grows from 2 ft. to 3 ft. high, and flowers freely through September and October.

S. serrata is of rigid growth, the stems clothed with narrow distinctly serrated leaves, branching towards the top, and terminated by dense tufts of flesh-coloured flowers. The flowering branches are from 15 in. to 18 in. in height.

S. trachelioides is the loveliest of the whole herbaceous section. It is of slender growth, the flowering stems very laxly disposed, and few in number; the flowers are a bright crimson, sufficiently dense in their arrangement to make them attractive; the stems are purplish, and the leaves scattered and ovate. It flowers in October, so late that it rarely ripens seed in this country.

The above species are selected from amongst those in cultivation as possessing well-defined specific characters. There are several other species, but so closely do they approximate to some of those mentioned, that to quote them would be to the ordinary cultivator but a mere repetition of names.

In the shrubby section, so far as I am aware, we have but two species in cultivation at the present time, viz., *S. salicifolia* and *S. Lundiana*, the latter sometimes called *S. Lindleyana*; possibly both may be more correctly referred as mere varieties to the old species *S. viscosa*, as one important feature in this plant is that the long, narrow leaves are covered with a viscid excretion. Its habit is distinctly woody and elegantly branching, and it grows to a height varying from 1½ ft. to 2 ft., under ordinary culture, but no doubt if planted out in a conservatory border it would assume the character of a good-sized shrub. Although not hardy, it has a value as a pot-plant for winter-blooming that would be more fully appreciated were it more widely known. When struck from cuttings in spring, and flowered in 32-sized pots, under the influence of the check from the small size of the pots, it produces freely its dense corymbs of white flowers, tinged with lilac, in September and October, and will extend its floriferous period in a moderately dry atmosphere into November and December, but so densely are the flowers arranged, that, failing the important condition of dryness, they are liable to be invaded and destroyed by damp, which is the great enemy we have to contend with in our greenhouses in November and December.

S. salicifolia has a somewhat similar aspect, is more vigorous in growth, blooms earlier, and is less dense in the arrangement of its pink-coloured flowers; moreover, it is not so woody, and hence not so well adapted for winter purposes. I have not met with it recently in cultivation, but have no doubt it may yet be found in some out-of-the-way corner of the horticultural world. Neither of these species ripens seeds in this country, hence they must be increased by cuttings; and a few reserve plants in small pots that may be placed

on a greenhouse shelf are a *sine quâ non*, in order to retain the plant in cultivation by the spring-cutting process to which I have already alluded.

As regards culture, the herbaceous section of the *Stevias* will thrive in almost any soil. Our heavy clay here appears to suit them equally well with the light gravelly soil at Kew—in fact, rather better—always provided one precaution be taken, and on this very precaution appears to hinge the fact whether the *Stevias* may be considered tender or hardy. Under any circumstances, whether in light or heavy soil, if the frost gets to the crown of the root, the plant is sure to perish, but if, on planting out, the crown is buried, say 4 in. below the surface, not placed level with it, as is too often done, but even at the expense of burying a portion of the then existing stems, that plant will stand for years, and what is more, improve every year, both in the number of its flowering branches and the vigour of its growth. When thus planted, it is a thoroughly good perennial, and coming naturally into blossom so late in the season, retaining the full vigour of the plant's development to the last, it has a high value as a border plant. I believe that a supposed tenderness—which, under the conditions I have indicated, becomes completely neutralised—has militated against the more general cultivation of this group of plants. The shrubby section may be readily increased by cuttings, which root freely in a gentle hot-bed in spring; but the herbaceous section, according to my experience, does not root so freely from cuttings. As a rule, however, they seed pretty freely, and in this natural mode of reproduction they appear to retain to a very great extent their true specific character.—JAS. C. NIVEN, *Hull Botanic Gardens*.

THE SHRUBBY DATURAS.

SOME years ago, I saw these plants grown as standards, and very handsome they were, with stems from 4 ft. to 5 ft. high, and planted out in the centre of rectangular beds, with such things as *Verbenas* as a carpet to them, the large flowers of *Datura Knightii* and *Datura suaveolens*—those of the former being large and double—giving off a strong perfume, more especially in the evening. When grown in this way as standards, they show their flowers to much greater advantage than in any other manner, and form a very pleasing contrast to a carpet of purple, pink, or scarlet *Verbenas*; moreover, they give relief to the otherwise monotonous appearance of a bed of *Verbenas* of one particular colour. In other cases, planted as centre-pieces, with standards of *Fuchsia fulgens* as a fringe, the *Fuchsias* having stems of about 1 ft. in height, they prove very effective and pleasing. The ample foliage of this *Fuchsia* shows off the bright red flowers to advantage, the flowers appearing like corymbs of drooping coral, and the foliage so toning down the bright colour of the flowers as to make a most pleasing contrast. These *Daturas* might be used very effectively among large-foliaged plants which are used for summer bedding. Indeed, beautiful as are many of our sub-tropical foliage-plants, such things as the *Datura* and *Fuchsia fulgens* would lend increased charms to them, for though

there is much diversity of form and colouring amongst our sub-tropical plants, yet there is still that ever-recurring monotony to which a few flowering plants of suitable character would give relief.

To get a stock of standard *Daturas*, they should be planted out in rich soil and well attended to in the way of watering in dry weather. They will grow vigorously, and send up suckers, which, from a strong plant, will grow from 3 ft. to 4 ft. in one season. These shoots will, in most cases, send out young roots at the bottom, and when taken up in the autumn should be taken off the parent plant, potted singly, and wintered in a cool greenhouse. In the spring, at the usual bedding-out time, those that have stems of the required height should have the point pinched out in order to encourage them to form heads; those that are not high enough in the stem should be trained to the required height before pinching off the leader, and shoots on the stems below must be carefully and continuously removed. By the end of the season they will have formed fair-sized heads. In the autumn the plants must be again repotted, the head being pruned in, and wintered as before; they should then be very sparingly supplied with water through the winter, until they begin to show signs of growth, after which they can be watered more freely.

Treated in this way, they will continue to do well for years, but will from year to year require larger pots to winter them in. They can be wintered in almost any part of a cool greenhouse, even at the back of the stage, where many kinds of plants would not thrive, or even live for any length of time; and they would be found to well repay the labour bestowed upon them. The *Fuchsia fulgens* may be made to form standards, if managed on the plan recommended for the *Datura*.—HENRY CHILMAN, *Somerley*.

GARDEN GOSSIP.

SOME interesting *Novelties*, of which we give a summary below, were produced at the *Cologne International Horticultural Exhibition*, which was opened by H.I.H. the Crown Prince of Germany on August 25, and continued till September 26. It was held in the Gardens of the Flora Society, a short distance from the city, the winter-garden, with its fine central Palms and other decorative plants, furnishing a central meeting-place and point of attraction. The show itself was scattered through several houses, little and big, a supplemental piece of land being occupied by hardy plants of various kinds planted out, and surrounded by covered sheds filled with machinery, agricultural implements, tools, and vegetable products of all kinds. The show was very extensive, there being nearly 3,000 exhibits, arranged under eight principal divisions:—1, plants; 2, vegetable products; 3, garden architecture; 4, garden decorations; 5, machines and tools; 6, miscellaneous collections of woods, insects, &c.; 7, bouquets and artificial flowers; 8, garden literature. There was, as usual in Continental gatherings of this character, a good exhibition of Palms, Cycads, and Tree Ferns, but there was a great deficiency of flowering plants, and very few Orchids, Crotons, Dracænas, Nepenthes. Succulent plants, Agaves, and Conifers—the two last arranged in the open air—constituted the most noteworthy features of the exhibition. Messrs. Voitch and Sons exhibited a very interesting collection of new and rare plants (not for competition), including amongst others *Rottlera barbata*, with Ricinus-like leaves and scarlet leaf-stalks; *Eulalia japonica*, a hardy grass, with white-striped leaves, likely to be an acquisition by the borders of lakes, or where an effective plant of medium size is required; *Yucca filamentosa angustifolia variegata*; *Pothos Endresii*, with neat

marbled leaves; *Pentagonia macrophylla*, a large-leaved rather coarse-looking plant; *Brahea filamentosa*, a new Palm to which much interest attaches, as it is stated to be hardy; it is a Fan Palm, the leaf-segments of which are edged with narrow white threads, as in *Yucca filamentosa*, and it is a valuable introduction indeed, if the prognostications as to its hardiness prove correct; in any case, as a greenhouse Palm it would be very ornamental; the divided-leaved *Croton Disraeli* attracted much attention, from the peculiarity of its form; they also showed *Asplenium ferulaceum*, with charming finely cut fronds; a fine plant of *Adiantum princeps*, one of the noblest of the Maidenhairs; and *A. Luddemannianum*, a densely crested and very ramose form of *A. Capillus-Veneris*; M. L. de Smet, of Ghent, sent a new variegated *Imatophyllum Aitoni*; and a most charming new *Agave*, one of the most remarkable plants in the exhibition; the species is one attaining large, though probably not the largest dimensions, and has thick, three-sided, glaucous leaves of a bluish-green colour, each terminated by a stout curved spine, the edges of the leaves being margined with a narrow belt of white; the whole plant looks more like a *Leuchtenbergia* than an *Agave*; it is as yet unnamed, and is believed to be quite new. M. Linden's new plants included a new *Artanthe*, some new *Crotons*, *Dracænas*, and *Cyanophyllum marmoratum*. Messrs. Jakob-Makoy and Co., of Liège, showed the bronze and purple-leaved varieties of *Artocarpus*, *Dieffenbachia Parlatoresi*; *Draccena angustifolia*, a long narrow-leaved form of very dark hue; *Pavonia Wiotii*, a new Malvaceous plant, whose beauty lies in its long narrow bright pink bracts; *Liparis elegantissima*, an Orchid with leaves dotted with pinkish spots; various new Marantas, especially *Maranta Massangeana*, a species of creeping habit with mid-sized leaves, of a rich deep-green velvety appearance, with a central disc of silvery white, the main nerves of the leaves being similarly picked out with white; and the charming little *Selaginella textura*, having much the appearance of a finely-plaited chain.

— THE under-mentioned *Bedding Pelargoniums* have this season been awarded First-class Certificates as bedding plants at the Chiswick trials:—Tyersall Rival, scarlet; Rosa Little, scarlet; Harry King, scarlet; Caxton, violet-crimson; Mark Twain, scarlet; Colonel Wright, light scarlet; Mrs. J. George, pale scarlet; Mrs. Augusta Miles, deep pink; Lady Emily, bright deep pink; Mrs. Holden, bright pink; and General Outram, dark scarlet. In the Gold and Bronze section—Golden Harry Hieover, W. E. Gumbleton, and Rev. C. P. Peach, were also awarded First-class Certificates, as were Gem of the Season and Argus amongst the Ivy-leaved sorts.

— MR. DENNY has favoured us with flowers of two of *M. Sisley's New Double Pelargoniums*, and which appear to us to be worthy of commendation, and which we understand are of the ordinary Zonal type, not the coarser-growing series represented by *Beauté des Suresnes*. *Buchner* is very distinct in character, with moderate-sized trusses of semi-double flowers, thinly filled-out with small inner petals, the colour a blush-white, with a salmon-coloured centre; it thus forms a very pleasing light-coloured variation amongst the double-flowered sorts. *Sylphide*, which is of the same type, is a mauve-tinted rose-pink, with a whitish centre. We presume both have been flowered in pots under glass.

— THE interesting question whether the nature of the soil affects the *Doubleness of Stock Flowers* of the first generation has lately been revived. M. Sterler, of Posenhofen, writing on the culture of Stocks, maintains that the number of plants with double flowers, assuming that the seed is good, depends upon the nature of the soil; that is to say, the same quality of seed that would bring a large proportion of double flowers in soil consisting of 75 per cent. of sand to 25 per cent. of loam would produce a large proportion of single flowers in a rich soil, especially in wet seasons. Pot-culture, too, will insure a large per-centage of double flowers. Dr. Regel holds the same view in the *Gartenflora*. It is not a little remarkable that luxuriance should induce doubleness in most subjects, and the reverse in stocks, especially in plants where the nature of the duplication is morphologically the same; but no doubt season and soil do exercise an influence in this way. Nevertheless, careful experiments to test the validity of this view, based upon incontestably ascertained facts, are desirable.

— THE *Lilium cordifolium*, which is very rare in Europe, is flourishing in quantity in M. Leichtlin's garden at Baden, a quantity having been raised from seed four years ago. The bulb of this plant, it has been noted, does not grow

on the surface, like that of *Lilium giganteum*, but should be deeply planted in a light vegetable mould, and protected from the direct rays of the sun. Maximowicz found the bulbs as much as 18 in. deep in the shady forests of North Japan.

— It is stated that Mr. Schmidt, of Lyons, has succeeded in raising a *New Race of Begonias* between *B. insignis* and some of the tuberous-rooted species. Although not of a very brilliant colour, *B. insignis* is extensively grown for cut-flowers in winter; and if these new hybrids possess the valuable quality of flowering freely in winter, combined with greater brilliancy of colouring, they will indeed be a valuable acquisition. Eight varieties are described, and it is stated that they are almost perpetual bloomers. We hope that they will prove all that is promised. The varieties have white and variously coloured flowers, from salmon and pink to rich carmine. The time is approaching when these qualities may be put to the test.

— It has been announced that Messrs. James Veitch and Sons, of Chelsea, have been awarded the *Empress's Prize*, consisting of a splendid porcelain service, richly painted with views of the Rhine, for the fine group of plants shown by them at the Cologne Exhibition.

— By far the best of all the *Heliotropes* which have come under our observation is one named *Surpasse Guascoi*. It is strong-growing, of erect habit, with very large corymbs of light-coloured flowers which open of a lilac colour, and fade off to a French white; these corymbs are often as much as 6 in. across, with an angular outline, the individual flowers being large, and the trusses very freely produced, and furnishing an abundant succession. The best of the dark-coloured varieties is *M. Sement*, which is of spreading habit, and has flowers of a dark-reddish purple, freely produced, in moderate-sized trusses.

— It is often difficult, observes the *Gardeners' Chronicle*, to get plants to do well under the *Shade of Trees*. We lately saw the difficulty overcome in a very satisfactory manner in the garden of Miss Hope, of Wardie Lodge, near Edinburgh, where the plant used was *Saxifraga umbrosa*, or an allied species, which formed a perfect carpet under the trees. It is occasionally cut over, which induces the plant to throw out offsets, and keeps it neat in habit.

— THE *Bulletin de la Société Horticole de Soissons*, on the authority of M. Willermoz, gives the following *Cure for Sickly Pot-Plants*, which he states has been pursued for some years with unfailing success by M. Lucas, of Hohenheim. It is recommended in the case of plants which have become sickly through over-watering, planting too deeply, &c. Amongst the plants so treated were Palms, Roses, *Ficus elastica*, and others. Instead of changing the soil, it is well stirred and soaked with water heated to a temperature of 133° to 144° Fahr., until the latter runs off freely from the bottom of the pots. After a few days the sickly plants recover their original look of health and vigour, and begin to grow again. The earth, it is said, becomes much more friable after this treatment, and when dry has all the appearance of fresh soil.

— OF the race of *Smooth-skinned Cucumbers*—the best of all for flavour—some of the favourite modern varieties are *Improved Telegraph* and *Duke of Edinburgh*; the skin of the former is of a lively green colour, that of the latter a shining olive-green. In winter and spring the Improved Telegraph is much esteemed in Covent Garden Market, but towards the middle of the summer it is apt to come crooked. Monro's Duke of Edinburgh is another excellent type of market Cucumber; it was raised by Mr. Monro from one he formerly grew for market under the name of Rabley Hero, and when well grown, averages from 15 in. to 18 in. in length, is very smooth, symmetrical in shape, and whether required for winter or summer work, or for cultivation in houses or frames, cannot be well surpassed.

— A CONVERSATION took place at the annual meeting of the Pelargonium Society, in reference to the *Origin of the Fancy Pelargonium*, in the course of

which Mr. Cooling, of Derby, stated his belief that the first variety of this type, which must have been raised forty years ago, was one called Willoughbyanum, and that it had been bred from the ordinary varieties of that period crossed with such sorts as Moore's Victory, Fair Helen, &c., Willoughbyanum being one of the seedlings thus produced.

— THE beautiful white-flowered form of *Lilium Krameri*, exhibited by Mr. Wilson at South Kensington on July 21st, has, it appears, been identified by the Lily authorities with the long-lost *Lilium japonicum*. It is a remarkably chaste and beautiful flower.

— THE magnificent examples of *Lilium auratum* to which we referred last year as growing in the garden of James McIntosh, Esq., of Duneevan, Oatlands Park, Surrey, are, if possible, excelled by the productions of the present season. The garden, or rather pleasure-ground, is very prettily laid out on a steep slope, the Lilies being planted around beds of American plants on the less sloping parts, and their deep green foliage throws up the flowers admirably. The finer and more established plants produce stems which are 3 in. to 4 in. in circumference, and average 6 ft. to 9 ft. high, in one case reaching as much as 11 ft. high, with great bluntly conical heads $2\frac{1}{2}$ ft. to 3 ft. broad and as much in depth, composed of 20, 30, 40, 50, or even 60 flowers. One three-stemmed plant produced 120 flowers. The large number of these Lilies grown by Mr. McIntosh must have yielded him many thousands of flowers, and the atmosphere of the whole garden is pervaded by the perfume. As might be expected, among so many plants there are numerous varieties as regards the size, form, and marking of the flowers, the largest of which measured a foot across. Some also flower early and others late, which greatly prolongs the season of bloom.

— THE Northumberland Fillbasket Raspberry is said to be one of the best sorts for producing a fine average sample of fruit. The fruit are not only very large, but rounded, of a deep red colour, and richly flavoured. This variety ought to be universally grown.

— THE following has been recommended as effectual in the removal of a colony of *Black Ants*. They took up their abode in a propagating frame, which was full of cuttings of various kinds, and made their nests in nearly every pot, the frame being quite overrun with them:—Some camphor was procured, and broken into small pieces; these were distributed on the surface in the frame, which was immediately shut up quite close for twenty-four hours; upon opening it, it was found that the ants had all decamped, and not one ant was to be seen either in the frame or near it.

— MESSRS. BUNYARD AND SONS, of Maidstone, write (September 14,) respecting the *Prince Englebert Plum*, as follows:—"Some time since you figured Prince Englebert Plum. It was made too small. We enclose you fruit from an east wall, to show that it is well worthy of cultivation, and far larger than your figure. They will hang yet for a month." Our plate was from specimens grown on a standard tree. Those referred to in the note above quoted, were very fine specimens, measuring nearly 7 in. round in the shorter, and $8\frac{1}{2}$ in., in the longer axis. They were deeply coloured, finely bloomed, and of a brisk agreeable flavour.

Obituary.

— M. ADOLPHE STELZNER died recently, at Ghent, in his 46th year. He was born at Arnstadt, in Thuringia, and studied at the University of Göttingen, where he devoted himself specially to vegetable physiology and systematic botany. He travelled subsequently in Germany, Russia, England, and France, and in 1857 entered the establishment of M. Van Houtte. In 1862 he entered into business on his own account, turning his attention specially to Ferns, and being the raiser of several supposed hybrid *Gymnogrammas*.



W.H. Fitch del.

Pentstemon humilis.

PENTSTEMON HUMILIS.

WITH AN ILLUSTRATION.

E are indebted to Messrs. Backhouse and Son, of the York Nurseries, for the opportunity of figuring this charming little hardy herbaceous plant, which had been imported by them from the Rocky Mountains, and which blossomed freely with them in the month of June. Though amongst the many species of *Pentstemon* in cultivation there are some more stately and showy than this, there is not one that is more charmingly beautiful.

It is a dwarf-growing plant, with the stems about 6 in. high in garden specimens, but according to Dr. Hooker, growing to twice that height in the wild state. The leaves, which are mostly radical, are narrowly linear-lanceolate or elliptic-spathulate, stoutish in texture, entire and glabrous. The flowers, which are half-an-inch to two-thirds of an inch long, are horizontal or drooping, and collected into a shortish panicle of three or four whorls; they have a slender slightly-inflated tube of a reddish-lilac tint, and a wide-spread limb of a deep bright blue-purple, the filaments being smooth, and the style hairy. One can scarcely imagine a more pleasing little border flower than this.—T. Moore.

GARDENING AND THE ROYAL HORTICULTURAL SOCIETY.

EAR on all sides lamentations that the Royal Horticultural Society should be in a state of financial embarrassment, that discordant views should exist, and that acrimonious discussions should have followed each other with such rapidity of late, at the public meetings at South Kensington. I regret the financial difficulty, I regret also the tone of the discussions, but I cannot say that I regret the discussions themselves. Peace is, I hope, at length restored, and the difficulty above alluded to in a fair way for arrangement; but if not, I have that faith in the importance of gardening, both as an art and as a science, to believe that it will not only stand the test of being talked over, but that the attention called to it by this means, although it may prove a momentary disadvantage to the Society, will prove a future and permanent gain to the thing itself.

I propose to myself, on the present occasion, to endeavour, first, to prove that gardening is entitled to rank both as an art and as a science; and secondly, to say something about the Royal Horticultural Society—past, present, and future. First of gardening as an art—Landscape Gardening.

Would any one assert that the power of imagining, designing, and working-out a complete and beautiful garden is outside of the domain of Art? It is true that an individual with the most rudimentary knowledge of a certain kind may plan and lay out a garden, as any one with rudimentary knowledge of another sort may work a figure in stone or place figures on canvas. But the mere mechanical skill employed in doing this is not of necessity art. The difference between gardens, as regards the offence they give or the pleasure they convey to

a refined and cultivated taste, is the difference between art and no art, and is no less than that between different creations of the poet, the sculptor, and the painter. But surely if we meet with a poem, a statue, or a painting in which there is no art, we should not be justified in asserting that poetry, sculpture, and painting were not properly classed among the Arts :—

“The poet’s eye, in a fine frenzy rolling,
Doth glance from heaven to earth, from earth to heaven,
And, as imagination bodies forth
The forms of things unknown, the poet’s pen
Turns them to shapes, and gives to airy nothing
A local habitation and a name.”

Well, does not the imagination of the landscape gardener, as well as that of the poet, the sculptor, and the painter, body forth “the forms of things unknown,” and what is this but art? The late Archbishop Whately, in his annotation on Bacon’s Essay on Gardens, says, “What is now called landscape gardening is, of all the fine arts (of which it may fairly be accounted one), the latest in its origin, having arisen not very early in the last century.” Washington Irving remarks that “the rudest habitation, the most unpromising and scanty portion of land in the hands of an Englishman of taste becomes a little paradise.” England, we know, is above all others the country of such paradises, and here is valuable testimony to the art which has created them.

Next of gardening as a science. Possibly no one will dispute that gardening, as regards the production of fruits, vegetables, and flowers, is fast becoming a science, but many may not agree with me that it already is one. In support of that opinion, I would adduce in evidence the fact that the same individuals produce year after year, almost with unerring certainty, and this notwithstanding the variable nature of our climate, the most perfect examples of the special fruits, vegetables, and flowers to which they devote particular attention. And passing from the known to the unknown, it is for the most part the same individuals who are working out successfully year by year the improvement of the particular races of plants which they have taken in hand. Is not this science?

I admit that gardening, both as an art and as a science, is at present in an infantile state; but this is the state in which all arts and sciences once were; there are here, as there were there, ample materials lying hither and thither with which to assert and vindicate the positions I am contending for; the materials only want collecting, assorting, and moulding into form. What our countrymen Bacon and Newton did for certain sciences in their day, we are wanting some one to do for gardening in ours. And if we cannot find all the necessary qualifications for the work in one man, may we not hope to find them separately in many, but capable of combination so as to work out this particular end? In the sixteenth century, Rubens, Snyders, and Jordaens painted in company for the realisation of a particular end, and the same experiment has been repeated in our own day by Cooper and Lee.

This brings me to inquire how far this particular work may be considered to

come within the legitimate sphere of the Royal Horticultural Society. Some of its Fellows of the last generation, notably Mr. Thos. Andrew Knight, did much in this direction, and it does not seem to me unreasonable to look for new Fellows to take up and push on the work from the present improved vantage-ground.

Now of the Royal Horticultural Society, past, present, and future.

I think no one will deny that it has done great and important work in the past. It has spread a knowledge of and taste for gardening, not only throughout the British dominions, but all over the known world. Principally through its influence, gardening has developed in two distinct lines—the useful and ornamental—and has taken a deep and an unextinguishable hold on the affections of the English people. If the man who succeeds in making two blades of grass grow where but one grew before, deserves well of his countrymen, surely the horticulturists of the past may liberally claim their gratitude; and the agriculturist, with his improved grasses and root-crops—due principally to the labours of the horticulturist—should be the first to recognise it. This one fact alone would stamp the labours of the past as of a national character.

But in the present the Society is also doing good work. The exhibitions and various committees at South Kensington and the experimental gardening at Chiswick are watched and followed not only from all parts of Great Britain, but throughout the civilised world. It is a pity there should be sounds which jar, and it is unfortunate that the Society should be in debt. The worst feature in the recent controversies has been the very common one in all such controversies, neither party giving the other credit for disinterestedness and honesty of intention. But is it not possible for individuals of different opinions to be equally honest and disinterested in their aims? I believe so, and certainly the way to come to an understanding is not by clamour, but by patient investigation and calm thought. Debt always has an ugly sound. But really the debt here is nothing, in comparison with the wealth of the neighbourhood, and the country, and the important interests which the Society represents. I hold the opinion, and holding it, I would not conceal it, that the debt contracted in the formation of the garden at South Kensington would have been no incubus, had the Prince Consort lived, to direct and support a movement in which he took so deep an interest. I think sufficient allowance has not been made for this in the controversies which have recently taken place, and in confirmation of this view, I would appeal to the chief workers in any or all of the institutions over which he presided. It is now many years since the good and wise King Leopold I. took an active interest in the promotion of gardening in Belgium, and to this fact was largely due the rapid development of the art and science of gardening in that country. And if to make a people orderly, industrious, and contented, be an aim worthy of the rulers of mankind, surely he did well in using this as one means to that end.

But of the future. We should first get out of debt, or so dispose of our liabilities that they may not be a serious drag on any necessary or important work. The gardens at South Kensington, or so much of them as is necessary,

should be retained for flower-shows, committee meetings, and town gardening; experimental gardening there, except as relates to town gardening, seems to me undesirable, and no more money should be spent there than the residents' subscriptions, and the rent paid for the gardens for *horticultural* purposes suffice to cover. Experimental gardening should be carried on at Chiswick. Surely the Society with its Council, its Committees, and their published proceedings, its flower-shows, its town and country gardens, should be able to draw thousands of subscribers and find ample funds for all legitimate work. But whether looking to the fashionable public or the general public for support, that public must, of course, be studied, courted, and won.—WILLIAM PAUL, F.R.H.S., *Waltham Cross, Herts.*

CHAUMONTEL AND OTHER PEARS AT FLOORS.

I WAS not aware till this year that Chaumontel Pears would grow so large as they do, so far North as this. We have several fruits that will weigh more than a pound each. I got a box of 50 sent me last year from Jersey, and none of them were heavier than those I have just gathered from a west wall. Gansel's Bergamot and Knight's Monarch are also unusually large, and so is Beurré Rance, all excellent winter pears—for although the Bergamot can scarcely be called a winter pear, yet we have it keeping till the New Year. I never saw a better sample of Marie Louise—large and beautifully coloured. A heavy watering with liquid manure in June no doubt tended to increase the size greatly. Easter Beurré does well on the same site, but it has been cropped rather heavily, and they are not so large as they would have been. This, the finest of all winter pears, is very valuable in the months of March and April. Where trees are, and these sorts are not, I would advise fruit-budding them in quantity on bare portions of the stem; it is not too late to do this, if the weather keeps open. All those kinds I have mentioned here, and many more, are on the pear stock, and are large trees, but have still room for extension, which I consider the life of a fruitful tree, having taken out rider-trees a year or two ago from between them. I think a south or west pear-wall planted with those first-class winter pears, is a valuable acquisition in a garden, and in my estimation ranks next to a house of Lady Downe's Grapes, when one is expected to present an eatable dessert from the New Year and onwards.—HENRY KNIGHT, *Floors.*

THE EDINBURGH CHAMPION CLUSTERS OF GRAPES.

EDINBURGH may well be proud of its recent International Fruit Show (held on September 15 and 16 last), since, over and above its general success, there were amongst the exhibits on that occasion, the two largest clusters of Grapes on record. The accompanying illustrations, for the use of which we are indebted to the *Gardeners' Chronicle*, show these magnificent clusters as they lay on their respective exhibition-trays, the figures being prepared from photographs taken during the exhibition. The credit of growing the bunch



THE ESKDALE CLUSTER OF RAISIN DE CALABRE: weight, 26 lb. 4 oz.



THE ARKLETON CLUSTER OF WHITE NICE: weight, 25 lb. 15 oz.

Offizieller Bericht, the Garden
1875 VIII S. 251

of Raisin de Calabre belongs to Mr. Curror, gardener to G. Douglas, Esq., of Eskbank, near Dalkeith; while that of producing the White Nice belongs to Mr. Dickson, gardener to John Jardine, Esq., of Arkleton, Langholme, near Glasgow, who has been the fortunate exhibitor of very large clusters on some previous occasions.

We have received from a correspondent the following interesting particulars respecting the Eskbank Grapes, which we here introduce :—

“Finding myself in Edinburgh the day before the International Fruit and Flower Show opened, I inquired amongst my gardening friends for the whereabouts of the monster bunch of *Raisin de Calabre Grapes*, which it was rumoured was about to astonish the whole world of Grape-growers, and soon found myself on the road to Eskbank, Dalkeith, the residence of George Douglas, Esq.

“Eskbank is a suburb of Dalkeith, on the direct coach-road to ‘Auld Reekie,’ and Mr. Douglas’s villa stands in a garden of about one and a half acres in extent, the flower and kitchen-gardens and plant-houses being at the rear. The flower-garden is small,—the bedding-out neat. The kitchen-garden is small, too, and well cropped, considering the soil, which is of a light, gravelly nature. Two small houses contain a nice collection of Ferns, another structure contains a small but healthy collection of Orchids, amongst which was the shy-flowering *Epidendrum prismatocarpum*, with three spikes of its beautiful creamy-white black-spotted flowers. Another small lean-to does duty as a greenhouse, and contained a good show of bloom.

“Then came the all-important objects of my visit—the Vineries. These are two in number, lean-tos, about 20 ft. each in length, and 14 ft. wide, 11 ft. high at the back, and well heated with hot-water. They have been built some seven or eight years; and were planted under the directions of Mr. William Thomson, then at Dalkeith, now of Clovenfords. The border consists simply of one-half of the light gravelly soil before mentioned, the other half of yellowish clayey-loam, with the addition to the whole of a few broken bones, and some manure. The border is 4 ft. deep and 13 ft. wide. The Vines are planted inside; and every year, both outside and inside, the usual dressings of rich manure are applied.

“Unfortunately for me I did not get to Eskbank early enough in the day to see the large bunch cut, but I saw it shortly after it was fixed on its tray, and also the cane from which it was cut. Its weight then was 26 lbs. 4 oz., a decidedly handsome bunch for its size, with fairly well-swelled berries, which had been well thinned in the first instance—the bunch after cut standing up firm and plump on its exhibition-tray.

“I have many times heard it said that in the case of these very large bunches, all the others are cut off to concentrate the energy of the vine on the single prodigy; but such was certainly not the case here, for on the same cane was another bunch which, I should think, would turn the scale at 16 lb., and two others at about 6 lb. each. In other words, the cane, which is only about 16 ft

long, carried an approximate weight of $54\frac{1}{4}$ lb.—a grand crop, it must be admitted. Mr. Curror, the worthy gardener, who has had charge of the vines from the commencement, told me that this cane had always done well, and one needed only to look at the strong, well-browned wood and ample foliage, to be assured of the fact. Mr. Curror also mentioned that a much larger bunch had ‘shown’ last spring on the same cane, but the lateral, unfortunately, got broken off in attempting to tie it up too soon.

“It may be asked, What were the other Grapes like in the same house? and my answer is, ‘Remarkably good.’ A cane of Lady Downe’s carried eight bunches from 3 lb. to 4 lb. each, perfect in form, colour, and bloom. Mrs. Pince’s Black Muscat carried eight bunches weighing about 5 lb. each; very fine berries, but not well coloured. Two canes of Black Alicante had an aggregate of twelve bunches, two of which would weigh from 6 lb. to 8 lb., and the remainder about 2 lb. each. Each and all of these were splendidly finished, and with one of the heavier bunches Mr. Curror had no difficulty in winning the first prize in the class for Black Grapes, judged for their bloom only.

“The Grapes in the other house were nearly all cut, so that I could only judge of the sample from a few Black Hamburgs, which were not large in the bunch, but fine in berry. The other sorts grown are Duke of Buccleuch, Duchess of Buccleuch, and Buckland Sweetwater, and I was told they had all been good.

“To wind up these notes, I may state further as regards Mr. Curror’s practice that he uses no more fire-heat than he can help, the most being applied when the Vines are in flower, and again when they begin to colour. He waters liberally both inside and out, never protects the borders from rain in winter, and gives about three thoroughly good soakings with either clear water or guano; and except to assist the Vines in breaking, when the syringe is used several times a day, they are not wetted in this manner at any subsequent period. As regards ventilation, Mr. Curror has a practice which is not common, at least, amongst English grape-growers, namely, that of giving air both back and front all night, when the weather permits. I think this has more to do with the production of large grapes than is generally credited, and with your permission, on some other occasion, I should like to say a few words on this and another hint or two which I have picked up, on the still all-absorbing topic of Grape-culture.—SABINA.”

ROSE HEDGES.

HERE is, perhaps, nothing so telling in a garden or pleasure-ground as a good hedge of Roses, and there is no Rose so well adapted for this purpose as the old *Fellemborg*. It begins to bloom with the opening of the spring, and continues up to the close of the autumn; and where it has plenty of room, it is for months a most splendid mass of crimson. It does for screens 8 ft. or 10 ft. high, and any one possessing a croquet or tennis lawn, and wishing in a rosy way to screen himself from his neighbours’ view, should buy *Fellemborg* for

the purpose. It will also afford loads of buds for table decoration, and for cutting, when others are all gone. There is, moreover, no better rose for making rose-water; if gathered with the hip or pip, it is here considered equal to the Old Perpetual.

A hedge of from 5 ft. to 6 ft. high wants very little support, and quite as little training or pruning, clipping at the sides and top to the required height being all that it gets here. For bedding, unless high, it does not answer, since it does not succeed with pegging. Any one can fancy the beauty of such a mass rising up from the grass 6 ft., and covered with great loose clusters of crimson, ever expanding. It propagates as easily as the Currant or Gooseberry.—J. FLEMING, *Cliveden*.

ERANTHEMUM PULCHELLUM FOR WINTER BLOOMING.

IF late years the demand on some gardeners for a continuous supply of cut flowers is truly astonishing. I have had my share, and have had to make both ends meet in some fashion or other. The latest difficulty I found was to be prepared, at a moment's notice, with certain colours; for the latest absurdity was to have certain colours to go with certain dinner-services, or to have flowers for the hair of the same colour as those of the dresses to be worn. Now amongst forced flowers, blues are rare, therefore I have found this favourite old plant, the *Eranthemum pulchellum*, is very desirable. When struck from cuttings in the early part of February, and highly cultivated, they will make nice bushes by the month of August, when they should be removed from the stove to the cool greenhouse, to check further excitement to growth. Then, if they are introduced to a lively temperature of from 65° to 70° in the early part of November, and if possible, provided with bottom-heat, they will blossom beautifully through December and January. After flowering, if they are cut down, disrooted, and carried through the same routine as above recommended for the cuttings, they will make better bushes still by the autumn following, and bearing more flowers in proportion to the foliage. These plants delight in abundance of moisture at the root, and if the pots are small, they are better kept in pans of water when in flower. The soil should be about equal proportions of loam, peat, and leaf-mould.—EDWARD BENNETT, *Rabley Gardens, Herts*.

MR. RIVERS' NEW FRUITS.

A FEW years ago, I determined on giving the Peaches and Nectarines from Sawbridgeworth a trial, and have now for two years taken crops from those first sent out. Of these, five are so excellent, that besides strongly recommending them, I will briefly detail their respective merits:—

Rivers' Early York Peach: Tender, rich, and juicy; large and bears freely. Ripens ten days earlier than the old Royal George.

Lord Napier Nectarine: Large, rich, juicy, and crops heavily. It is the earliest

I have; this variety does not drop when ripe, and if not gathered will shrivel, and is then delicious.

Alexandra Noblesse Peach: A great triumph; large, rich, delicate; will bear cropping, and ripens thoroughly as a standard in mid-season.

Pine-apple Nectarine: Large, of fine flavour, but as a standard requires the best situation in the house.

Victoria Nectarine: Large and of exquisite flavour, and sets so freely as to require several thinnings. Even under glass this fine Nectarine requires a wall. I am still (September 22) taking fruit daily, and for several years have gathered the last on Michaelmas Day, so that Napier and Victoria have extended the Nectarine season to nearly two months.

All these fine varieties are robust and of free-growing habit. They are all grown here in the orchard-house as trained standards and planted out, except Victoria. I have planted the "early" varieties as they came out, but from luxuriant growth they have fruited so imperfectly that I will defer a description of them till next year, when I purpose to register the ripening period of each, as well as of the old kinds hitherto cultivated.—G. D.

GARDEN WORK FOR NOVEMBER.

FLOWERS.

NOW that the summer beauty of the flower-garden has departed, no effort should be spared to render the general appearance of this department as enjoyable and interesting as possible. In this phase of embellishment we are at last making rapid progress; so that in place of the cold sterility which, as a general rule, once characterised our parterres during the dreary winter months, we are enabled, through the employment of the more distinct and higher-coloured evergreen shrubs, to create a most agreeable scene, which renders the loss of the gaudy summer subjects the less to be regretted. No favourable occasion should now be lost of replenishing the beds, whilst, for the present, unremitting attention will be requisite to preserve anything like neatness and order. As a set-off to the fast-falling leaves and decaying vegetation, well-kept turf and bright, firm walks are most desirable.

Herbaceous borders should now have a thorough clearing out, dividing and replanting such fibrous-rooted *Perennials* as require it. Plant out *Biennials*. Thin and transplant out *Annuals*, making the ground solid around them. Plant *Lilies* in ground that is thoroughly drained, in a deep, friable compost, and finish the planting of *Bulbs* of every description.

Ranunculuses, in well-drained soils, are best planted at once, whilst upon cold wet soils they are better deferred until February. A deep open soil suits them best; let the beds be well stirred up at least 2 ft. deep, working into the bottom a good proportion of fresh loam, with well-rotted cow-dung, which should be thoroughly incorporated. The surface 6 in. of soil should be free from manure, and should be rendered open by the addition of a little leaf-soil and sand. The roots are apt to perish when placed in actual contact with manure when in a dormant state. Plant in rows 5 in. apart, and cover the roots about 2 in. in depth, strewing a little sand over the crowns when planted. When swelling, the roots are more particularly susceptible of injury from frost, and

should be protected with a slight covering of leaf-soil or decomposed loam. Fern may be placed over the beds during severe frosts, but it is necessary to guard against weakening the plants by drawing, and such protection is sometimes injurious by generating damp; an inch-and-a-half of leaf-soil is perhaps the best and only necessary protector.

The *Anemones* are so closely allied to the *Ranunculus*, that they may be treated almost in the same way, but being hardier, the whole should be planted in autumn. In planting, cover the roots about three inches in depth. *Dahlias* should be lifted as soon as the tops are destroyed by frost, cutting short the stems; and when the roots are properly dried they should be stored away in a cool place free from frost, yet where they are not likely to shrivel.

Shrubberies: Transplant and prune deciduous trees and shrubs as soon as their leaves have fallen; and what planting of *Evergreens* may yet remain to be done during autumn should be seen to at once, as they do not succeed so well when transplanted during the dormant winter months. Take advantage of favourable weather to carry out premeditated ground-work alterations. Levelling and turfing repairs may also receive attention. Frequently roll lawns, to keep under worm-casts.

Roses should be lifted as soon as the leaves have fallen, but never previously, as they are apt to loose by evaporation, and consequent shrivelling of the bark; more particularly is this destructive when they are exposed during long journeys. In preparing ground for *Roses*, let it be trenched $2\frac{1}{2}$ ft. deep, and well incorporated with a liberal dressing of manure to the full depth of the soil, adding fresh heavy loam when the soil is light. Plantations that are in an unhealthy state should be lifted, shortening back the roots and replanting firmly in fresh soil. Standards should at once be staked. Brier Stocks should now be planted, as well as cuttings of *Manetti* for budding.

Conservatory: At present *Chrysanthemums* will form one of the chief features of attraction. They soon succumb in a close, warm atmosphere, and require a situation where air can be given freely at every favourable opportunity, for unless they can be freely exposed to air they are liable to be attacked by mildew. *Salvia splendens* is one of the most effective decorative plants at the present season, associating well with the *Chrysanthemums*. *Calanthes* will now be in bloom, and are second to none as graceful, decorative plants; with moderate watering, and a temperature not under 50° at night, they last a length of time in bloom. I find the Hybrid *Veronicas* most effective conservatory plants throughout the autumn; plants that are rooted this autumn, and either planted out or grown in pots during the summer months, make profuse-blooming plants at this season. *V. imperialis*, amaranth-red, is a very desirable variety; and *V. rubra-superba*, magenta, with yellow anthers, is very effective; as is *V. rosea elegans*, and the varieties of *V. Andersoni*. Keep the foliage of *Camellias* and *Orange-trees* perfectly clean, for besides the brighter appearance they present, it is beneficial to health. Moderate the use of fire-heat as far as may be consistent with the health of the majority of the plants employed.

Greenhouse: Frequently examine those plants which are liable to suffer from mildew and damp. *Leschenaultias*, *Boronias*, *Eutaxias*, *Pimeleas*, &c., are susceptible of injury from cold, cutting currents; and where they have to be wintered in the same house with a miscellaneous assortment of plants, it becomes more difficult to afford them a suitable temperature; dust with sulphur to keep under mildew, admitting air freely whenever the weather permits; anything like indiscriminate watering must be avoided. *Liliums* should be potted at once, using thoroughly drained pots for those of the *speciosum* type. I have found a com-

post of about equal portions of fibrous loam, peat, and leaf-mould with sand, to be suitable. In planting, place the bulbs sufficiently low, to admit of a surface-dressing of a rich compost with manure, when the roots are started into growth in spring. This I prefer much to mixing manure with the soil at the time of potting. A greater proportion of loam may be used for the stronger-growing varieties, much always depending on the nature of the loam, which varies so materially in texture.

Herbaceous Calceolarias which have been growing in frames should now be transferred to a light, airy pit, and kept near to the glass, affording them a free current of fresh air at night and day during favourable weather, keeping them moderately moist at the root, and using no more fire-heat than will actually keep out frost; they dislike dry heat, and must be afforded a cool temperature. *Cinerarias* which are starting into bloom should be assisted with weak manure-water, keeping them near to the glass, and freely ventilated.

Stove: Plants that are at rest should be sparingly watered and kept moderately cool, whilst such as are being brought forward for decorative purposes should be encouraged until they are expanding their flowers, when they should be gradually hardened off, so as to better enable them to stand for decorative purposes, either in pots or as cut blooms, and all foliage-plants used for this purpose must be kept so far hardy as not to suffer from exposure.

Forcing-house: Some of the most forward plants of *Azaleas*, and successional batches of bulbs, should now be placed in heat, keeping them as close to the glass as possible. *Cyclamens* should be kept near to the light; water carefully at the root; such as are throwing up flower should be encouraged with a slight heat, as should also *Bouvardias*, *Tea-scented Roses*, *Deutzias*, *Spiræas*, *Lilacs*, and the early-blooming *Rhododendrons*, *Callas*, &c. To be successful with the forcing of the *Lily of the Valley* thus early, procure thoroughly ripened clumps, which should be forced into pots tightly; water thoroughly, and allow time for subsidence; then plunge in a bed of leaves or other fermenting material, covering over the crowns 18 in. or so with the material. By this means the flower-stems extend more freely than when the crowns are exposed to air, and they should be afterwards gradually inured to light.

Bedding-plants must be frequently examined and carefully watered, giving an abundance of air, so as to neutralise weak growth and prevent fogging-off, as they suffer more from confined damp than actual frost. All hardy subjects should be fully exposed during favourable weather.—GEO. WESTLAND, *Witley Court*.

FRUITS.

Vinery: If the early house was closed last month, give a little fire-heat in cold weather, so that the night temperature may not fall below 45° , and be maintained at about 60° through the day; syringe the Vines every day, and maintain a moist atmosphere by sprinkling the pipes and floor of the house; give air in bright weather, and raise the temperature 5° by the end of the month. *Pot-Vines* intended for *early* fruiting should now be placed in the forcing-house; these will bear a higher temperature than established Vines, on account of both root and branch being in the same temperature. Look over ripe grapes frequently, and cut out all decayed berries; give a little fire-heat through the day in damp weather, giving air at the same time. If the leaves have fallen in the succession-house, the Vines may be pruned.

Pines: Collect a good supply of leaves to be in readiness for filling the pits when they may be required, and keep them in a compact heap, so that they do

not get saturated with wet. Give air at every favourable opportunity to the succession-plants, but close the pits *early* in the afternoon; keep a steady bottom-heat of about 75° , and a night temperature of 65° , with a rise of 10° or 15° during sunshine. Less water will now be needed, especially in pits without fire-heat. Plants in fruit should range a little warmer than the succession-plants, the atmosphere being kept moist, and air given every mild, quiet day.

Cherries and Plums: This is a good time for potting young trees for succession; and all pot-plants intended for forcing next season should be examined, to see that the drainage is perfect, and to give those requiring it more pot-room. These should be shifted into fresh loam and rotten manure. The pots of those not requiring to be shifted should be surfaced with the same kind of compost, after removing a portion of the old soil. When finished, protect the pots and roots from frost by plunging them in leaves or litter.

Strawberries in Pots: These should now be in their winter quarters. Those intended for *early* forcing had better be placed under glass in a cold frame to get dry; others for later work should be plunged sideways in ridges of coal-ashes or litter, to protect them from frost and drenching rains.

Hardy Fruit: Every kind of fruit-tree may now be planted with advantage; and doubtless this is the best time for removing, root-pruning, lifting, and re-planting large trees, to induce fruitfulness. The latter plan is most applicable to Pear-trees that are making strong growth. In some cases, where the subsoil is unfavourable to the health of the trees, they should be occasionally lifted and fresh soil placed about the roots, for the sole object of keeping these latter near the surface. In renewing old *Wall-trees*, the border should be well trenched to its full width, and some fresh loam and rotten manure added as the work proceeds; get the ground well forked over and aired before planting the new trees, and when that is complete, the surface of the soil should be mulched with manure or litter, to encourage them to root at once. This will apply to all newly planted trees. Go over *Peach* and *Nectarine-trees* with a soft broom, and remove a portion of the leaves for the purpose of admitting sun and air to ripen the wood. Any fruit-trees that have shed their leaves may now be *pruned*, and if infested with scale or moss, they should be painted over with a mixture of soft-soap and tobacco-liquor before the trees are nailed in. If any late Pears or Apples remain on the trees, they should be gathered at once. Look over the fruit store often, and remove all fruit going to decay. Give air till the sweating process is over, after which time the store should be closed. A dry, cool, close atmosphere is best adapted for the long keeping of winter fruit.—J. POWELL, *Frogmore*.

VEGETABLES.

Towards the middle of the month *Broad Beans* and *Peas* may be sown for the earliest spring crops; the former upon any open, exposed border or quarter, and the latter upon sunny southern slopes or sites, and where all the most favourable conditions will be enjoyed. A chance sowing of some kind of short-top *Radish* made during the first week in the month often furnishes a very useful crop for drawing, either in the early winter, or following spring, according to the mildness or otherwise of the weather. In all instances where seedling *Winter Lettuces* have grown freely, and have assumed a moderately large size—and this will be the case generally this autumn, owing to the mild moist weather experienced—it will be advisable to transplant them; placing the largest into frames, pits, or other protectors, if at hand, or simply taking them up and re-planting them on the same site. By these means they will be in a condition the



J. L. Macfarlane del.

Prince of Wales Plum.

better to withstand the severity of the winter, than if permitted to continue uninterruptedly their free succulent growth. In regard to such as were planted into frames or pits last month, too much air cannot possibly be given to them, both by day and night; hence, it is better to side-tilt all the lights, and to leave them so constantly during all but sharp weather.

Autumn seedling *Cauliflowers* should now be transplanted in positions where hand-lights or some kind of plant-protectors, can be placed over them. It is an excellent plan to dibble out as many as 9 or 10, under each hand-light; and if these all pass safely through the ordeal of winter, then in the spring, to thin them out to about five plants, transplanting those removed on to another chosen situation. In this way, not only is a larger supply insured, but—and this is very important—a successional one also.

The advanced crops of *Celery* must now be well and finally earthed-up, both to ensure the necessary blanching, and as a safeguard against early frosts. Finish planting or transplanting all kinds of *Cabbages* and *Coleworts*, and well “mould-up” all existing plantations. Hoe well between crops of *Spinach* during fine dry weather. *Globe Artichokes* should be covered with some kind of protection against severe frost. See that all the decayed leaves, &c., are removed from around the crowns of *Seakale*, and make preparations for forcing them.

Take up a supply of *Jerusalem Artichokes*, *Horse-Radish*, &c., to store away for use, should severe weather ensue, and make all things as neat and tidy as hoe, rake, and broom in handy hands are capable of doing.—WILLIAM EARLEY, *Valentines*.

PRINCE OF WALES PLUM.

WITH AN ILLUSTRATION.

OUR figure of this useful Plum has been drawn from specimens furnished by Mr. Dancer of Turnham Green, by whom the variety is very extensively cultivated for market purposes. It appears to have been raised from the Orleans some 45 years ago by Mr. Chapman, a market gardener of Syon, near Brentford, and on account of its bearing qualities it has in the interval become very widely distributed amongst the market-gardening community.

The fruit is rather above the medium size, and of a roundish form, inclining to oval, and having a distinct suture. The skin is a bright reddish purple, or purplish pink, dotted with yellow dots, and covered thickly with an azure bloom, which produces a tint very difficult to reproduce in artificial colours, and of which our figure perhaps shows too little of the bloom. The flesh is rather coarse-grained, separating freely from the stone, yellowish in colour, with a sweet juice and brisk flavour. The fruit ripens at the end of August or the early part of September. The Prince of Wales is one of the best culinary Plums grown, and is besides regarded by Dr. Hogg as a second-rate dessert variety. Thompson says it may be used, like the Orleans, both for dessert and kitchen purposes. The tree is of vigorous growth; the young shoots long, and covered with a smooth bark, in which respect it differs from the Orleans; and the leaves are oval, with a crenated margin, and smooth upper surface.

The tree is very hardy in character, and a most profuse bearer even while young, which is perhaps partly owing to the large foliage acting as a protection to

the blossoms. The fruit usually hangs thickly all up the branches, which at an early age are well furnished with fruit-bearing spurs. Of late years the trees in the market gardens about London have suffered considerably from the dying-off of large branches, but the cause of this malady has not been ascertained. It may possibly be due to exhaustion, owing to the excessive crops it produces.—T. MOORE.

WINTERING THE CALCEOLARIA.

MANY gardeners, as well as amateurs, are giving up the culture of these plants for bedding purposes, on account of their dying-off during the hot summer months. On the other hand, I have been told, both this and the past summer, by visitors that have called here, that they have been surprised to see that we had scarcely any dying off, either in the beds or ribbon-borders. We have one ribbon-border, 150 ft. long, in which the fourth row is *C. viscosissima*; another border, 90 ft. long, in which the third row is *C. aurea floribunda*, besides those in the beds; and of all these, not more than twenty plants have died off since they were planted. This, I believe, is in a great measure owing to the treatment they receive during the winter months. Instead of being coddled up in pots, they are never put into one, but early in October a frame, 10 in. high at the back and 6 in. in front, is set on an open piece of ground, and filled in the following manner:—2 in. of coal-ashes are put in the bottom, trodden quite firmly, and well watered; the frame is then filled with the soil for the cuttings, half of which should be light loam, the other half road-grit, the two being well mixed together, and filled in to within about 1 in. of the top, the remaining space to the top of the boards being filled up with white pit-sand, well beaten down with the back of a spade, and well watered.

The next day it will be in good order for the cuttings, which should be put in with a dibble, 2 in. or 3 in. apart, and well watered to settle them. They will require no more attention for a few weeks, when it will be requisite to put a common frame over them, the lights of which may remain on the whole of the winter. Should severe winter frost set in, a mat, or some other covering, should be put over them. Hand-glasses, if more convenient, will do just as well. The summer treatment I hope to explain on some future occasion.—WILLIAM PLESTER, *Elsenham Hall Gardens*.

THE CULTURE OF ORCHARD TREES.

TRENCHING THE GROUND.

IT is usually in deep water that we find the largest fish; and shallow culture seldom carries much profit. One of the rules for a West-country ploughing-match was worded thus:—"The furrow to be not more than four inches deep," but one of the Judges had it altered to "not less" than four inches deep. This shows what was the general custom of Devon ploughmen not more than 20 years ago, and it needs no witchcraft to prophesy what would inevitably be the result. Be this as it may, this celebrated cider county was,

as a matter of course, great in the affair of Apples, and when gentlemen applied to the Exeter Nurserymen—who were second to none—for cider Apple-trees, it was usual to have some talk over such an important concern, for the cider in Devon, like the pig in Ireland, had to pay the rent; and the outcome of this conversation was generally an expensive preparation of the soil, by trenching it two feet deep, not to mention draining, fencing, and manuring. What concerns the present subject, however, is the deep cultivation so essentially necessary to success in orchard-planting. The trees, to be safe above ground, must be well established below, for the heat of the sun, the moisture of the rain, the action of the light, and the ventilating power of the wind, are all useless, unless the trees take deep root, and find the raw materials of nutrition provided beforehand.

It is true that in some favoured localities, where the staple is not only deep, but rich, one has only to stick in an apple-tree any time during the winter, and it will grow and flourish; but these examples mislead many a person who sees the one in a hundred succeed, but fails to note the loss of the ninety-and-nine. With an annual plant like the oat, or the barley, the four-inch theory is found to answer, and the roots of course usually range only to the depth of the tillage; but roots of the onion and the wheat have been traced to a depth of 9 ft. or 10 ft. Now we know by placing thermometers in the soil, that frost is violent at the surface, and mild at 1 ft. down, while at 2 ft. down there is an even temperature all the year round. The rainfall has a great deal to do with the temperature of the earth, for in summer the warm rain coming in contact with the warmer surface on which it falls carries down heat. In like manner, melted snow and cold rain in winter cannot help cooling what they come in contact with; but the deeper it goes the warmer it finds the medium, so that whilst the water in the 4-in. furrow is locked up in the solid form of ice, the water at 2 ft. deep has never lost its fluid state.

The speed with which plants grow when they are rooted deep enough to endure strong sun is marvellous. I had some land deeply trenched, and in the bottom of the trenches, cabbage-stumps, and other garden waste, as weeds, mown grass, &c., was placed; the plot was then planted with cauliflower-plants, and they withstood a burning sun for six weeks, and by that time the cauliflowers were fit for the table. This summer trenching left the ground warm to the depth of 2 ft. or 3 ft., and hence the rapid growth of the crop.

Gardeners know well what summer heat will do with shallow tillage. The cabbage tribe will mildew, and the pea crop will show blue-mould instead of light green leaves, for it seems a fixed principle that whenever a plant gets out of health, and is unable to propagate its species, there is always a destroying agent ready to worm it out of the world, like the vulture with the carrion.

Clay clods have tormented mankind for hundreds of years, for we read in Holy Writ of the man breaking the clods. The brickmaker is well up in this matter, and casts his clay in winter, and waters it; this is his manner of breaking clods, and as long as he can keep it wet, it cannot form a clod. Now the

subsoil or under-spit of the orchard may be a clay, hard-pressed and impervious to rain, and as poor as a stone in the way of food for plants, and yet this is the staple that has to be converted ; this clay has to be cast, but not buried. Every one thinks he can dig, and it is reputed next to beggary—"To dig I am not able, to beg I am ashamed," said the unjust steward ; but even this simple delving requires experience, and it is laughable to see a beginner sweating himself with a navvy's shovel, by way of cultivating his front garden of 12 ft. by 4 ft.

Ordinary trenching is done by cutting out slices 2 ft. wide, and casting the top spit right into the bottom of the trench. This is garden trenching, where the soil has been repeatedly moved, and the bottom spit is as good soil as the top, or perhaps better. When I mentioned the brickmakers casting the clay, it was practically to illustrate my meaning, for the orchard would not be improved by having its clay subsoil on the surface and its good earth buried, but by casting, each article may be cast into its right place, viz., the weeds in the bottom and the clay over these, and the clean good soil on the top. I do not speak here of manuring, as I am confining this paper to trenching, for the sake of showing that the food of the trees should be spread out where the mouths, *i.e.*, roots, can find it. All tap-roots are usually cut off in the nursery before coming into the hands of the orchard-owner, but the forest Oak, with its huge roots above-ground, teaches every tree-grower the lesson that it would have buried them, but for want of earth. In orchard-planting it is quite within our power to keep the plough in the ground, for every root is at all times ploughing its way into fresh pasture.

In Vine-culture we have the summer heat in our own hands, by means of glass roofs and hot-water pipes, but in the orchard the trenching and fattening is pretty nearly all we can do, and we should do this well. Where the trees are short-lived, splendid fruit can be got from young trees before they get beyond the trenched depth. Many people seem frightened at digging up an Apple-tree, as if root-pruning had never been heard of. A tree that is running away from its work, and getting into bad pasture, may be cut adrift from its outlying roots and placed on the surface or near it, in fresh soil.

The Pear-tree is usually larger than the Apple, and more inclined to become tap-rooted ; hence we often see a fine piece of brick wall in a garden, covered with a Pear-tree producing leaves and foreright shoots only. In such cases I have often longed to have 4 ft. of its crown cut off, and all its arms cut back to half their length, and its roots in like manner cut back to a fathom in length. How such a trunk would take anew to clay and cow-dung at the root, and salve of the same materials plastered over the wounds, and over all the bark to retain moisture until the circulation had set in ! In the valley of the Thames, if the soil be simply manured, it will need little other preparation for Pear and Apple-trees ; but in most localities where Pears and Apples are grown on stiff soils, over unhealthy subsoils the trenching is a safe and healthy remedy. It is hateful to see an unhealthy scrub cumbering the ground, when had it been properly fed and tended, its fruit might have gladdened the eye.—ALEX. FORSYTH, *Salford*.



NEPENTHES INTERMEDIA.

HYBRID Pitcher-plants would have been thought beyond the range of probability not many years since : as mythical as hybrid orchids then were ; but so rapid is the progress of horticulture, that not only have hybrid orchids, some of great beauty, been obtained in considerable numbers, but hybrid

Pitcher-plants have followed in their wake, and Messrs. Veitch and Sons' staff of assistants have obtained for them several forms of acknowledged distinctness and merit as ornamental plants. Their account of *Nepenthes intermedia* is as follows :—“ A very distinct hybrid, raised at this nursery, and obtained by our foreman, Mr. Court, from *N. Rafflesiana* and an unnamed species with small spotted pitchers. The plant is of robust and free growth. The pitchers, which are produced very abundantly, are somewhat similar in shape to those of *N. Rafflesiana*, but longer, and are densely spotted and flaked with reddish-brown. This novelty will prove an excellent companion to the well-known *N. Rafflesiana* and *N. Dominiana*,”—the latter also a hybrid. It has been awarded a First-class Certificate at South Kensington. We are indebted to the Messrs. Veitch for the use of the figure.—T. MOORE.

THE GOLDEN RETINOSPORAS.

IT is somewhat singular that we so seldom meet with this class of plants in our pleasure-grounds. This omission certainly cannot arise from their extravagant price, but rather, I should imagine, from an imperfect knowledge of their intrinsic merit. I would offer this caution, that in no case should they be planted in close shrubberies, for obvious reasons. They are impatient of confinement, their colour suffers, and they lose their bottom branches by the rapid advance of their more vigorous neighbours, unless constantly kept in check by a watchful eye. It cannot be said that they are particular as to soil, only they dislike the limestone, and the chalk still worse. In either, the habit is stunted, and the foliage assumes a singed appearance, which has anything but a pleasing appearance. Even when growing freely, the pretty Golden Retinosporas are apt to produce strong side-shoots, which, if allowed to go unchecked, rob the terminal leader of its power, and thus give the plant a squat or spreading habit.

There are several golden kinds of *Retinospora*, but among them the best and those of the most decided colour will be found in *R. obtusa aurea*, *R. pisifera aurea*, and *R. pisifera nana aurea*.—ALEXANDER CRAMB, *Tortworth*.

STANDARD PEACH-TREES IN THE OPEN GROUND.

ABOUT the middle of September last, Mr. Small, of the Old Nursery, Colnbrook, drew my attention to three small standard Peach-trees which were growing in the open ground, and were laden with fruit, fast approaching to maturity, and this without protection in the spring, or any attention whatever through the summer. The varieties were the *Royal George* and *Galande*. I have since had a communication from Mr. Small, dated September 30, in which he says :—“ I have this day gathered the last of the standard Peaches you saw here, in all 240 fruit, which ripened between the 18th and the end of the month. I may add that this is not the first time by many that I have gathered Peaches from standard trees. The fruit realised a good price in the market.”

The fact of Peaches ripening in the open ground in an ordinary season like

the present, goes to prove that the summers, in the southern parts of our island, are quite warm enough to ripen any of our mid-season Peaches without the aid of walls, &c. The drawback to this mode of Peach-culture is the prevalence of spring frosts. If we could get the fruit *set*, there would be no fear but that they would ripen. This consideration seems to suggest the adoption of some simple appliance so as to ensure the setting. Suppose that a square or border of dwarf standard trees were planted in a favourable situation, the soil being properly prepared and well drained for their reception. After the first year's growth, the trees would require to be lifted and root-pruned, to encourage them to make short, fruitful growth, and when in that state the wood would be sure to get well ripened. The next thing to be considered would be how to protect the blossoms in the spring. I should advise that a light framework should be placed over the trees, and fitted with canvas blinds on rollers. This would afford ample protection, and after the crop was safe from risk of injury from frost, the covering could be taken away till required the following season. There would be comparatively little trouble afterwards, as the trees would be much less subject to the attacks of green-fly than those on the walls.—J. POWELL, *Frogmore*.

ZONAL AND NOSEGAY PELARGONIUMS.—I.

E are certainly indebted to the newly-formed Pelargonium Society for a most interesting, and it might fairly be added, complete exhibition of all the latest improvements in the zonal and nosegay types. This society offered prizes for collections in conjunction with the Royal Horticultural Society's great show on July 21, and growers came out strong, the plants staged being remarkable, not so much for their size as for the beautiful development of their flowers. We could not have employed such an appreciative treat but through the co-operation of Dr. Denny, Mr. Thomas Moore, and their friends. True, all these newer Pelargoniums are sent to Chiswick, and all that can be done by Mr. Barron is done to display them to the best advantage; but few go there to see them, and consequently many fine varieties have remained almost unknown. The exhibition in question brought a large number of them to the fore, and the finest examples of the two great raisers—Dr. Denny and Mr. J. R. Pearson—as well as those produced by others, were seen to the best advantage, growing in pots and under canvas. That the unpropitious weather prevented but a few from seeding is a matter of great regret.

We are now very rich in pink Pelargoniums, and those classed under this heading, though having rosy-lilac and violet-pink shades, but which are best grouped under the head of pink varieties. They have, indeed, been improved of late. Take *Christine*, *Amaranth*, *Mrs. William Paul*, and *Blue Bell*, as representing the oldest types, and what an advance has been made! The rich glow of colour in *Amaranth* is now found associated with the fine form and substance of *Mrs. William Paul*, and these have undergone improvement also. Taking Pearson's *Lucy Bosworth* as representing the highest advance in pale pinks, and

his *Ethel* in lilac pinks, it seems difficult to improve upon them. But they will be improved upon notwithstanding, for indefinite expansion is the universal law. As one of our most eloquent of modern preachers has remarked :—"Throughout the earth, the gospel preached by nature to man is that of growth. This is the glorious marvel that is ever with us. Seed-grain climbing to waving harvest; acorn springing up to towering oak; black coal crystallising to diamond, and flint gathering the heat of the earth, till as opal it meets the dawn with tints pure as its own, on every lowliest grass-blade and leaf is written the story of Ascension."

It is well to describe a few of the leading pink varieties, and let me state at the outlet I should always grow a plant or two of *Mrs. William Paul*, for its delicate hue of soft pink; and *Blue Bell*, for its tint of violet not yet surpassed. I am thinking of these as varieties for pot-culture, and all my notes will be written from that stand-point. Christine, Master Christine, Amaranth, &c., all having loose flowers and narrow petals, I exclude from my selections. I commence with *Rose of Allendale* (Denny), clear pink, fine pip, excellent truss, and good habit of growth, a very useful decorative variety; *Mrs. Turner* (Pearson), lilac-pink, very fine-rounded pip, and noble truss, extra fine, for exhibition; *Lucy* (Pearson), fine rich puce-pink, large bold pip and truss, very bright and effective; *Miss Blanche Story* (Pearson), very bright soft pink, most pleasing in shade, fine pip and large truss; *Lady Emily* (Pearson), rich clear pink, a most winning glow of colour, fine pip and truss, and free habit; *Mrs. F. Barnaby* (Pearson), violet-pink, very charming in hue, good bold truss; *Mrs. Flytche* (Pearson), a pretty hue of colour, but rather loose in the petal, a charming bedding variety; *Florence Durand* (Pearson), deep lilac-pink, very fine truss, a fine exhibition variety when well grown; *Beauty of Dulwich* (Smith), clear soft pink, flowers of good substance, fine pip and bold truss; *Mrs. Musters* (Pearson), deep lilac-pink, very fine when well grown; *Le Lord Maire* (Lémoine), lively violet-pink, a very pleasing hue of colour, but inclined to come a little rough on the pip; *Mrs. Augusta Miles* (Pearson), very rich pale rosy pink, glowing in colour, and very fine; *Robert Evans* (Pearson), pink, much suffused with rose, very fine; *Matilda* (Pearson), pale glowing pink, fine pip and truss.. I have reserved for the last in this section a few of Mr. Pearson's new varieties, being of superb quality, and it may be remarked that Mr. Pearson appears to be a long way ahead of contemporary florists in the matter of producing pink-flowered Pelargoniums. His newer varieties are *Lady Byron*, rich clear pink, very fine pip and splendid truss, a grand show variety; *Lucy Bosworth*, beautiful clear soft pink, very large rounded pip and splendid truss, extra fine; *Ethel*, very rich deep lilac-pink, very fine bold pip and large truss, extra fine.

The salmon-coloured flowers show a steady improvement, and now that some of Mr. Pearson's new varieties are becoming striped, they are taking on a certain amount of distinctness of character. Not that striped flowers are altogether new, but the Continental varieties with striped flowers are rather poor in quality; and any advance in this direction will be cordially welcomed. Some of the best types produced at the Pelargonium Society's meeting were as follows :—*Nobby* (Catlin), pale salmon, with carmine stains round the eye, fine pip, and good truss; *Mrs. Catlin* (Catlin), soft salmon, paler towards the margin, bright carmine centre, fine pip and truss; *Pollie King* (George), a very chaste and attractive variety, pale salmon, good form; *Venus* (F. and A. Smith), a very pretty shade of salmon, but small truss; *Maud* (Pearson), salmon-carmine, blotched with faint red, white

eye, and broadly-margined with white; very pretty and distinct; *Salmon Beauty* (Laing), salmon, much flushed with orange, good form; *Edith* (Laing), pale salmon, reticulated with white, very pretty and novel; *Mr. Collier* (Collier), very pale salmon, orange blotches, narrow white margin, very fine pip, and good truss; *Acme* (F. and A. Smith), delicate salmon, bold carmine centre, very fine pip and truss; *Desdemona* (Bailey), soft salmon, very chaste and pretty; *Ellen Douglas* (Kingsbury), salmon, much flushed with orange all over the petals, very fine form; and *Lizzie Hefford* (Hefford), clear salmon centre, with slight lines of the same radiating towards the white margin, very pretty and distinct. Mr. Pearson's newer salmon varieties were not present on this occasion, but I may have something to say about them later on. *Forest Hill Nosegay* (Laing), clear salmon-red, very showy, and distinct, must not be passed over, as it is very effective as a pot-plant.

Of thoroughly fine white flowers we have yet a paucity. The best produced on this occasion were *White Clipper*; *Snowdon*, very fine in colour; *Woman in White* (Postans), slightly creamy white; *Snow* (Postans), pure white; and *N. D. de Beaunark*, flowers of good substance, but very slightly tinged with flesh; *Remus* (Paul), white, with pale carmine blotches round the eye; and *Alice Spencer* (Hibberd), something in the same way, but white, might fittingly be included among the whites.

There are certain varieties having rosy-salmon and cerise flowers that may be appropriately grouped by themselves, because of their undoubted distinctness of character. They are *King of Roses* (George), rose, dashed with cerise, very distinct, but wanting in quality of the flower; *Circulator* (George), cerise, form good, novel in character; *Caven Fox* (George), orange-cerise, very distinct and fine; *Charles Burrows* (Pearson), cerise, much flushed with orange, distinct and fine.—RICHARD DEAN, *Ealing, W.*

GARDEN GOSSIP.

AMONGST the meetings and exhibitions of the autumn season, the *International Fruit and Flower Show* of the *Royal Caledonian Horticultural Society*, held in Edinburgh, on September 15 and 16, takes the first place.

As a display of finely-grown Grapes, it was marvellous, the two immense clusters represented at p. 245 being among the exhibits. In the other classes Mr. Hunter of Lambton Castle, and Mr. Johnston of Glamis Castle, exhibited wonderfully fine examples of the principal sorts in cultivation. Indeed, it was, on the whole, probably the finest display of fruit ever brought together in the United Kingdom. Peaches were remarkable for size and colour, and some grand specimens came from Mr. Braund, Courtown House, Wexford. Nectarines, Apricots, and Plums furnished an average display, while Pears and Apples were both numerous and of good quality. There was in addition a good display of plants, notably some fine groups of novelties and rarities from Messrs. Veitch and Sons, and Mr. Williams.

—THE *Fungus Meetings* at Perth and at Hereford have this season been remarkably successful, and there can be no doubt that they prove to be very enjoyable to those who at all understand the subject. A number of gentlemen who devote more or less attention to the study of cryptogamic botany—fungology in particular—assemble at an appointed time, and some three or four days are given up to excursions for collecting the fungi of the neighbourhood, the rest of the time being taken up in arranging the collections for public exhibition, in holding meetings for the reading of papers on this branch of botanical science, and in genial gatherings, not omitting a public dinner, in which various edible fungi naturally form part of the menu. Some of these are of excellent quality, but for want of generally diffused knowledge of their good qualities are suffered to run to waste. *Coprinus comatus*, for example, has a most delicately agreeable flavour; and comatus-soup is sometimes one of the dishes devoured at these fungus forays.

— THE *International Potato Exhibition*, held at the Alexandra Palace, on September 30, and which was organised for the encouragement of the best methods of culture, and the introduction of improved varieties, was both unique of its kind and a remarkable success. The competition in nearly every class was astonishing for a first attempt, and of the 1,860 odd dishes staged there were not many that an ordinary house-keeper would object to. Indeed, it may be taken for granted that but few of the visitors ever saw so much beauty in Potatoes before. The collection of 24 dishes shown by Mr. R. Dean, and the 12 dishes contributed by Mr. Donaldson, in competition for Messrs. Sutton and Sons' prizes, were respectively of wonderful quality, and a great source of attraction.

— AMONG *Edging Plants* suitable for either flower or kitchen-garden, are the fine-leaved forms of *Festuca*, one of which has been introduced under the name of *Festuca viridis*. This slender-leaved grass makes a remarkably fine and at the same time dense growth, and the leaves are of a bright olive-green colour. It will bear clipping during the summer, and it is so hardy that it will stand through the severest weather without injury. Selected forms of *Festuca ovina* have for many years been used for edging purposes in the Chelsea Botanic Garden, and when young are very neat and pretty, but they should not remain over the second year without replanting. The plants split up readily, and may be either dibbled in, or planted in the same way as box-edging.

— A USEFUL little book, entitled *Handy Book of Ornamental Conifers*, and of Rhododendrons and other American-flowering Shrubs, by Hugh Fraser (Blackwood and Sons), has just been published. It is a reprint of papers published in the *Gardener*, and is exceedingly well adapted for the use of amateurs as an aid in the selection of choice hardy trees and shrubs, specially those of the two groups indicated, for the decoration of their gardens. The hints on cultivation, though brief, are such as would be likely to be appreciated by those who were seeking for information.

— THE *Royal Aquarium and Summer and Winter Garden* now approaching completion at Westminster has afforded Mr. Rendle a favourable opportunity for showing off his patent system of glazing, of which the Hon. E. C. Curzon remarked, at a meeting held to view the progress of the work, that "in this edifice there was ample scope for inventive genius, and he had been much struck with the system upon which the glazing of the roof was carried out. The roof was circular, and in the glazing of it the glass was not put in with the usual adjuncts; no putty was used, but the glass was simply slid into the grooves of the frames made to receive it." The glass, in fact, covers in the wood and ironwork, which is thus relieved from the destructive action of the London atmosphere, while externally only a narrow strip of zinc is seen.

— THE advantage of the new style of *Planting Pyramid and Bush Trees* over the old method of wholly planting standard trees finds a good illustration in Mr. Dancer's market-garden grounds at Little Sutton. One large portion is planted with lines of bush trees of Small's Admirable Apple, the trees 8 ft. apart each way, and they were literally borne down to the ground with the great weight of the fruit. Pyramidal trees of Cox's Orange Pippin Apple, planted in close lines, bore heavy crops of beautiful fruit, large in size, and brilliantly coloured. On instituting a comparison between these and the large standard trees planted years ago, it is found that the latter cover large spaces of ground, that their crops are not particularly abundant or fine, and that they interfere with the circulation of air among and the incidence of light on the smaller trees about them. The space occupied by one standard tree would equal that occupied by six or more of the bush trees, while the roots must have spread proportionately in the soil beneath. Gathering becomes an easier and quicker process; ladders are not required, and the handling of ladders among trees sometimes does them injury. Not one of the least of the considerations to be put forward in favour of bush over standard trees is, that a finer quality of fruit is obtained.

— WE have received from Mr. Grainger, of Buckley Hall Gardens, Ashton-under-Lyne, a photograph of a fine specimen of *Lilium auratum*. It is growing in a No. 2 pot. In 1872, on one flat stem it bore 25 flowers, and on

the rest 15, making a total of 40. In 1873, the bulb broke up, and threw out several stems, with but few blooms. In 1874, there were on one stem 50, and on the other 20 flowers, making a total of 70. The present year's bloom has been extraordinary; several stems were thrown out, but one in particular, $3\frac{1}{4}$ in. in diameter, bore the enormous number of 70 flowers, there being on the rest of the plants 20, making a total in the third year of its growth of 90 blooms, which is the greatest number of blooms that has been produced. [A plant at Melchot Court bore 152 flowers; and one at Quarry Bank, Liverpool, bore 225 flowers. Both had been grown on from single bulbs.]

— THE *New Double Pelargoniums* raised by M. Jean Sisley are stated by Mr. Grieve, of Culford, to be very great acquisitions, being exceedingly beautiful, and of quite a distinct race from the double sorts hitherto known. They are of dwarf and compact habit, with foliage of medium size, and distinctly zoned; the flowers are large, semi-double, the centres being loosely filled up with smaller petals, and they form large globular trusses, thrown well above the foliage. *Louis Agassiz* has light shaded pink flowers, which are very beautiful. *Louis Buchner* has light bright pink flowers, with salmon-coloured centre. *Henri Lecoq* has flowers of a salmon-shaded pink, the plant dwarf, with heavily zoned foliage. *Sylphide* is, perhaps, the most beautiful of all, the flowers being of a rich mauve or rosy-pink colour. Of older sorts *Georges Sand*, by the same raiser, is a great advance upon *Aline Sisley*; the flowers are large, the colour very light rosy-pink, or nearly white. When grown under glass the plant is of dwarf habit, with somewhat small and peculiarly formed leaves, slightly zoned. *François Pertusati* has the centre of the flower salmon, with lighter-coloured margins. *Talabot* is a rich deep velvety amaranth-colour, an improvement upon *Gloire de Lyon*.

— It is a commonly entertained opinion that *Beaucarneas*—plants which are specially remarkable for the great swollen or napiform base of their stems—are extremely slow-growing, and doubtless they are so under the restrictive treatment they usually receive, which is almost that of succulent plants. We are indebted to Mr. W. B. Kellock, of Stamford Hill, for exploding this false notion. With his choice collection of *Agaves* and other succulent plants, he cultivates most of the *Beaucarneas*, and observation and experiment have induced him to reverse the usual treatment given to these plants. The result is a much more vigorous as well as much more rapid growth. The plants are deluged with water, often twice a day, during summer, and in the dull season, when comparatively at rest, they are never allowed to become dry. The beneficial effect of this treatment is abundantly shown in a fine example, which a year or two since came almost leafless into Mr. Kellock's hands, but which is now freely clothed with vigorous healthy foliage. It is also apparent in the rapid growth made by young plants.

— THE name to be borne by the splendid Lily mentioned at p. 215 is *Lilium Parkmanni*, after the raiser, Mr. Parkman, who is President of the Massachusetts Horticultural Society, and is also known as an author on early American history.

— ACCORDING to Herr Leichtlin, *Lilium Hansonii* is the proper name of the fine Japanese species which in this country has been exhibited and figured as *L. avenaceum*. The plant is easily distinguished from *L. avenaceum* by the bulb, which is large and solid, like that of a Tiger Lily, while the bulb of *L. avenaceum* is composed of small loose and oat-like scales. The origin of this Lily was unknown till Professor Maximowicz, the distinguished Russian botanist and traveller, recognised it as a plant which he had found at Victoria Gulf, and had supposed to be a yellow variety of *L. avenaceum*.

— A supply of good *Heath Soil* or *Peat* is of primary importance to the cultivator. It is the earth which is found where heaths grow naturally, and is the peculiar soil of those plants to which the title 'American' is applied. This soil was once known by the name of bog-earth. Of late years, however, it has been called peat and peat-earth. Peat, strictly speaking, is the black decayed vegetable matter dug out of bogs and turbaries; it is to most plants inert and useless, but to a few, as the *Amaryllids*, it affords an aliment of great power. The writers of the day mean by the term "peat" to express heath-soil, the bog-earth of long ago; hence we read of sandy peat, turfy peat, black peat,

&c., terms which are applicable only to heath-soil, and which express the varying texture of that material. The best heath-soil contains much fibrous matter, and is either black or brownish, the hue depending upon the peculiar nature of the vegetable matter it contains. All these soils usually abound with pure white sand; hence their peculiar applicability to plants whose roots are very fibrous, tender, and delicate. Pure peat, or the earth of turf-bogs, contains very little sand; it is a heavy dead soil, forming, when burnt, a rich manure for inert cold land; but in most instances it is adverse to the gardener.

— We find mention in the *Journal of Horticulture* of some remarkably fine *Orchard-house Fruit* of Cox's Orange Pippin Apple, grown by Mr. Bass, of Burton-on-Trent—the beauty of their colour, the wonderful delicacy of their flesh, and their richness of flavour being remarkable. Samples of Margil and of the Old Nonpareil were also greatly improved. The lesson to be learned from this is, that apples of this class, which are grown for flavour, are highly improved both in that respect and in appearance by being grown in an orchard-house. The effect of this system, however, is that the state of ripeness is so much advanced, that the fruit does not keep so long as it does when grown in the usual way.

— MR. LAXTON has raised some *English Seedling Roses* of considerable promise. The best of them is one he has named *Mrs. Laxton*, a beautiful bright carmine-rose Hybrid Perpetual, which is not only large and full, but of remarkable depth; the outer petals are smooth and prettily recurved, displaying a compact, full, close-set centre, and it has the advantage of being remarkably sweet-scented. This variety has already gained certificates at the Crystal Palace and Alexandra Park Rose Shows. *Lady Isabel Cecil* is a small, neat citron-tinted Tea Rose, becoming almost white—a pretty flower, and nicely scented, and one which may some day, when better established, prove useful. *Charles Darwin* is a deep crimson Hybrid Perpetual, with cup-shaped but rather shallow flowers, having fine large outer petals, and loosely and rather thinly filled in the centre. *Emily Laxton* is a more promising, large-flowered Hybrid Perpetual, of a deep rosy-pink colour, but with the petals somewhat unequal, the outer ones being large and the inner short and irregular, nevertheless a flower which may turn out to be an acquisition when better known.

Obituary.

— MR. S. GINGER, Esq., died at Clarence Lodge, Shirley, Southampton, on the 7th ult., aged 73. He formerly resided near London, and was an amateur cultivator of the Auricula, Polyanthus, and other old-fashioned florists' flowers; and at that time was a frequent exhibitor at Chiswick. Horticulture and Horticultural Societies lose in him a generous friend and patron.

— MR. WILLIAM WILLISON, of the Rose Nursery, Whitby, died on the 16th ult., aged 69. He had always been a great lover of plants, and an assiduous raiser of new varieties. Some of his more recent experiments resulted in the production of the double-flowered *Clematis Willisoni*, and he has also been successful in finding and raising some interesting new forms of British Ferns.

— SIGISMUND RUCKER, Esq., of West Hill, Wandsworth, died on the 19th ult., aged 66. He has for more than forty years occupied a foremost position as a patron of orchid-culture, and of horticulture generally, his collection of the former being at one time quite unrivalled. His death leaves a blank no living orchidist can fill, while in private life he was alike beloved by rich and poor.

— MR. THOMAS APPLEBY died on the 20th ult., at Longsight, Manchester, at the advanced age of 80. He was a practical orchidist, having some forty years since been gardener to T. Brocklehurst, Esq., of Macclesfield, who at that day was one of the patrons of orchids. Mr. Appleby wrote a brief treatise on orchid-culture, called the *Orchid Manual*. He was at one time manager of the Pine-apple Nurseries, but had for some years retired from active life.



W H Fitch del.

Chromo. G. Severeys.

Begonia Emperor.

BEGONIA EMPEROR.

WITH AN ILLUSTRATION.

WE have already figured one or two of the novel hybridised forms of tuberous Begonias which have sprung from *B. Veitchii*, *Pearcei*, and *Clarkii* crossed with *B. boliviensis*, and which promise to be so extremely useful for decorative purposes, in the greenhouse and conservatory certainly, if not also in the summer flower-garden. We now introduce another of these cross-bred forms, raised by Messrs. Veitch and Sons, of Chelsea, between *B. Clarkii* and *B. Chelsoni*, and which when exhibited in June last, before the Floral Committee, received the award of a First-class Certificate.

The plant is vigorous in habit, producing stoutish erect fleshy branching purplish-red stems, and ovate acuminate, unequal-sided, distantly-lobed leaves, the edges of which are acutely serrate. The flowers are very large, in axillary clusters of three, one being male and two female. The male flower is sensibly the larger, its two sepals being $2\frac{1}{2}$ in. long and $1\frac{1}{2}$ in. broad, ovate-obtuse, and its two petals somewhat smaller and oblong. The female flowers have five petaloid organs surmounting the winged ovaries. All the flowers are of a bright orange-red. This is one of the finest of these tuberous-rooted Begonias we have seen, and is most highly to be commended as a decorative plant. With high cultivation, it would make a charming specimen.—T. MOORE.

THE NATIONAL CARNATION AND PICOTEE SOCIETY :

EXHIBITION AT MANCHESTER, AUGUST 13TH.

ACCEPT my thanks, Mr. Editor, for the ready permission given me to make some comment on this Exhibition, held in the large glass conservatory of the Manchester Botanical and Horticultural Society on the above date. As I looked around upon the display, enhanced as it was by a most artistic setting at the hands of the respected Curator of the gardens, my memory reverted to a former Exhibition held in the same building just eighteen years before; and remembering that of that exhibition, I had felt bound to remark upon the inferiority of the Picotees as compared with the Carnations, a fact very surprising to me, as in "my experience, the Picotee required much less skill and attention to develop it in perfection than the Carnation," I noted with great satisfaction the advance made by my Northern friends in this direction, and I am bound to say not only were they fairly abreast of the flowers I had in my own garden, and the fine flowers I had seen at Slough, but in the purple edges—both light and heavy, they had certain varieties in a degree of perfection far beyond what I had seen in the South, and leaving, indeed, little either to be attained or desired. If I say that I marked the blood of some of my own bantlings of a long time ago in several of these most beautiful varieties, and that, if spared, I shall watch with a very special interest their development in my own garden in the coming season, more particularly as it was generally held, I believe, and frequently asserted, that

varieties from the Princess Alice strain would not thrive in the softer air of the South, I hope I shall be pardoned the seeming egotism of the remark.

I wish, Mr. Editor, that, following this most satisfactory development of varieties and growth, I could say our friends had made equal strides in their mode of setting up their flowers in collections, but here truth compels me to say there was much lacking, and I could not see without regret such opportunity for effective display, save in one or two exceptional cases, either missed or perverted. I should have been glad, in the confidence that my motive would not have been misunderstood, to have given illustrations of this lack or perversion in the mode in which the collections were composed, but seeing an esteemed professional friend copying the names of the flowers, I neglected to take any notes, and unfortunately, when I received his report, I discovered too late that instead of following the old rule of "commencing with the back row and reading from left to right," by some strange misdirection he had reported each collection, not in the order in which it was shown, but in the order of the classes only. My remarks must, therefore, be general; yet I hope, nevertheless, they may not be lightly passed over by my brother florists, for the more I have thought upon the subject, the more I am confirmed in the opinion that a florist loses half, and the best half, of his enjoyment, who does not give thoughtful and intelligent attention to the accessories and aids to the development of his pets, and to their presentation in their very best guise before the eye of an interested public.

It was the late Lord Lytton, I believe, who defined taste, as "a relish for things intellectually improved," and as I looked up and down the long table, I could not but feel I was surveying some things open to intellectual improvement. Proud of the florist's art, assured that his pursuit is "not unworthy of a wise man, nor unbefitting a good one," and always desirous to uphold in their integrity the strictest canons of his law, I could not avoid the conviction that, consciously or unconsciously, there was much which did violate such law, and that, too, by men who, if called upon to determine the merits of individual flowers, would reject without mercy any in which the colour was found only on one side, or which lacked smoothness on the surface or of the edge, or which was palpably poor in quality or lustreless in colour. Yet several of the collections exhibited palpably faults of this character. Granting exhibitors can only show such flowers as they have on the day of exhibition, and if needs must, must show a preponderating number of some one or other class, it is an exaggeration of such a misfortune to dispose of such a number in a mass, without an attempt even to relieve the incongruity by a judicious arrangement of size. Then, again, ill-painted, dirty, and dingy boxes, varying in size and colours, are a great dis-sight and serious drawback to the perfect success of an exhibition. The dimensions of the boxes, I think, should be prescribed explicitly by the executive, and therefore beyond offering to give these to any one interested, I need say no more on this part of the subject. But as to the colour, or shades of colour, best adapted for the display of flowers, and the best mode of getting-up and arranging them for effect, this is a much

larger matter, and perhaps you will pardon my repeating some remarks I made on the same subject just twenty years ago.

‘In the first place, as to the colour of the boxes, no one can have attended our chief exhibitions without having his attention drawn to the varying colours and shades of colour employed by the different exhibitors. One will have an imitation of mahogany, another of rosewood, one chooses a pale green, another a blue-green, and everywhere there is diversity. It may help us to choose the best, if we decide what office the box has to fulfil. We hold that it should be a *foil to the flowers displayed upon it, and nothing else*. To this end, it should contain nothing to arrest the eye offensively, or markedly to arrest the eye. What the eye must see in its study of the flowers displayed should be such as will afford relief, so that the gaze upon the colours of the flowers may be sustained with pleasure for a longer time. No colour will give this relief so well as *dark green*, and no colour is less obtrusive, therefore we have long decided that this is best. *Dark green* is not, however, the best for displaying the colours of the flowers. A lighter shade, and one with a slight admixture of yellow, one, in fact, closely resembling the tint of the newly-opened rose-leaf, does this far more satisfactorily. We therefore use this for the field on which the flowers are placed, and the dark shade for the front, sides, and back of the box.

‘Another important point to attend to is that the colour shall be solid and dense, smooth and as polished as a piece of plate-glass. It is impossible to over-estimate the effect attention to these little matters of detail has upon the appearance of flowers, and their influence upon good judges—that is, persons whose eyes have been long educated to discriminate minutely upon the effect of colours, and sensations of softness and smoothness, as opposed to roughness and coarseness.

‘In getting up the flowers for exhibition, it should be remembered that they cannot be handled too little, and that it is far better to show the flower precisely as cut from the plant, than to show it with one-half or more of its petals disfigured by ugly splits. We observed, however, a serious error in the use of the card, which we must point out. Some of the competitors used no support under the card, but having starred the interior, allowed it thus to support itself upon the calyx. The effect of this inevitably was that every petal was pressed upon the other—in short, the flower was choked. Nothing could be more injudicious. The card, light and thin as it may be, is far too heavy and unyielding to be allowed to exert a pressure upon the delicate organisation of the flower. To prevent this, a clear orifice of not less than five-eighths of an inch in diameter should be made in its centre, and its whole weight thrown upon a circle of light paper attached to the calyx in the usual manner. Not only by this arrangement is the flower saved from distortion consequent upon the pressure of the stiff points of a card, but another advantage is gained in the ability to remedy, by the play of the card, the defect occasionally observable of a one-sided bloom—that is, a flower the petals of which are unequally expanded.

‘To come now to the arrangement of the flowers for effect. It may be safely predicted that that mode will be the best which, with a uniform appearance, shall most largely develop the beauties of contrast or combination in colours. Contrast in the individual flower forms one of the most important of its elements of beauty, and it is of equal value in a collection. Indeed, we may say it is of greater importance, as, dealing with larger quantity, its effects may be made so instantly apparent. Thus the boldness and effect of a broad-edged Picotee may be enhanced by judiciously placing it by the side of a flower lightly edged, and the brilliancy of a bright scarlet flake Carnation is increased when seen immediately in the neighbourhood of a soft purple flake. Uniformity will be secured by choosing flowers even in size, and by so arranging the blooms that the colour shall be fairly balanced on every side. Colour will be imparted to the collection by the use of scarlet bizarres or dark crimson bizarres, brilliancy by bright scarlet flakes, and softness by clear purple flakes, rose flakes, or light pink bizarres. In all cases care should be taken that the corner flowers be distinct and decided in their character, and the fuller and deeper they are, consistent with distinctness, the better. In Picotees, heavy-edged flowers have a far better effect at the corners than flowers of a lighter character. In these, as with the Carnation, and every other flower, the colour should be nicely balanced, so that the eye may be carried easily over the whole.’

I hope, Mr. Editor, you will not think these extracts too long. They so meet the case, that after reading them several times over, I find myself unable to restate them more effectually, and as the best return I can make to my old and valued friends for the warmth and kindness of the welcome they gave me at the show, I am anxious to aid them according to my small ability, in every matter open, as I think, to improvement.

The Society is most fortunate in the service as honorary secretary of the Rev. F. D. Horner, a son of the late Dr. Horner, of Hull, so widely known to and esteemed by the readers of the early issues of your work; and is supported by many influential, and if I may presume so to say, intellectual florists of the North. I hope that year by year there may be an exhibition in the beautiful house of the Manchester Botanical and Horticultural Society's Gardens. But I hope even yet more, that with the revival of the Society, it will recur to its original programme, and change its meetings from year to year from locality to locality, for I can conceive no way more potent to draw attention to the singular beauty of these beautiful flowers, no way so sure of extending the enthusiasm almost all feel when brought in contact with them fairly displayed.

The exhibition, as I have already recorded, was rich in new and good varieties. Mr. Simonite's stand, though low down in the prize list, from the fact that the flowers were far past their prime, was almost unique, in that it contained twenty-two out of twenty-four flowers—ten Carnations and twelve Picotees—of his own raising. Several of these were of this year's bloom, and will require to be seen again before an opinion can be given; but unless I am greatly mistaken, he had

many flowers destined to occupy the thoughts and delight the eyes of florists for some time to come. Subsequent to the show, I visited the garden of Mr. Lord, at Todmorden, and that of Mr. Bower, of Great Horton, Bradford. Mr. Lord has seedlings, several yet to offer to the floral public, which, unless I misjudge them, cannot be surpassed, and it may serve to illustrate the sportiveness of this tribe of flowers, and therefore of their great interest to the seedling raiser, if I tell, as Mr. Lord told me, that Mrs. Lord, rose Picotee, heavy edge, and Cynthia, of the same class, light edge, are seedlings from Mrs. Bayley, purple, heavy-edged, whilst the Rev. F. D. Horner, red, light edge, is from another variety of mine, Mrs. Turner, rose, light edge.

Other varieties of Mr. Lord's, Ann Lord; No. 3, light purple Picotee; Nos. 23 and 28 in the same class; and Nos. 24, 27, and 100, heavy-edged purple, are from Mrs. Hanaford, set with pollen from Mrs. Bayley, and being a strong believer in hereditary quality, I was not surprised to find in these seedlings the highest excellence. Mr. Bower's Lord Raglan, C.B.; John Smith, red Picotee Mrs. Bower and Clara, in the same class; a light-edged purple Picotee as yet unnamed; and a rose-flake, much in the way of a good Lovely Ann, which he honoured me by naming E. S. Dodwell, will cause his name long to live amongst florists, and hoping that when the Society next meets I may be there to see, I subscribe myself, Mr. Editor, your most obedient servant—E. S. DODWELL.

FRUIT-TREES FOR NORTH WALLS.

I HAVE often been asked what kind of fruit-trees I would recommend for north walls. Many persons have an idea that few kinds will succeed on such an aspect, owing to the want of sunshine, and the exposure to the cold. This is, however, a mistaken impression, as many of the best kinds of Plums, Pears, and Cherries succeed well, and bear abundant crops on north walls. Unfortunately gentlemen's gardens do not always furnish the best example of what can be grown on north walls, from the fact that against one of such walls are generally built the fruit-room, mushroom-house, bothy, potting-sheds, &c. Morello Cherries, a few Currants, and a Plum-tree or two are generally what are grown on north walls. It is an advantage to have a north wall for Plums and Cherries, as they ripen later than on other aspects, and hang a considerable time, thus continuing the season for a much longer period.

We have the following *Plums* on the north walls here—*Orleans*, *Green Gage*, *Impératrice*, *Jefferson*, *Kirk's*, *Victoria*, *Magnum Bonum*, *Washington*, and *Reine Claude de Bavay* (the two last late Plums), all of which bear well, generally better than those on other aspects, as, coming later into flower, they often escape the spring frost, while the others are cut off. Our finest *Green Gages* are from trees on north walls, and we have them a considerable time after those on south and other aspects are past. On a north wall here, there is a *Jefferson* Plum-tree, and on a south wall, two fine healthy trees of the same variety; the former generally bears as many fruit as both the other trees. There are also several kinds

of Cherries on the north wall which do well. They are easily protected when ripe, and keep late into the season.

We have no Pear-trees on the north wall, as we have many on the other walls, besides some standards, and a great number of pyramid trees, which yield a quantity of excellent fruit; but many kinds of Pears do well on north walls. I would not, however, advise to plant Pears on a north wall; but instead, would strongly recommend the better kinds of Plums.—M. SAUL, *Stourton*.

GROWING MUSHROOMS IN SAW-DUST.

MY noble employer, in common with many other noblemen and gentlemen, keeps a good stud of hunters. In the spring they are all bedded down with saw-dust, which, being allowed to remain for some days, or, for aught I know, some weeks, when it is taken out is found to be pressed hard together, so as to come away in large flakes, looking as much like mill-track spawn as anything that can be imagined. The bed I made up with material of this kind was 67 ft. by 4 ft., in-doors, but without artificial heat. I began to gather in six weeks, and have had a good supply ever since.

I may be told that saw-dust creates or favours the growth of fungi, but I must remind those who make this objection that the dust is all from green sound wood, and the question is simply this—does sound-wood saw-dust generate fungus like old or decayed wood? I should like the opinion of some of your scientific readers on this question.—R. GILBERT, *Burghley, Stamford*.

SCALDING OF GRAPES.

THE annoyance caused by Grapes “spotting” during the stoning period is evidently not on the decrease, and though in some gardens it is confined chiefly to Lady Downe’s Seedling, it shows itself in other places on most of the late kinds, and that often to a very alarming extent. I have seen Alicantes, Muscats, Trebbianos, and even Black Hamburgs severely attacked, and much mischief done. It is generally believed that giving an abundance of air, keeping the house dry, and never allowing it to be entirely closed at any time, will secure immunity from this formidable plague, and in a great measure this is correct; but there remains a difficulty in accounting for the evil. Why should it appear in some places and not in others? In one place I have had it attack the Lady Downe’s severely in one house, and the same variety has escaped in an adjoining structure with only a glass partition separating the vines. I never had Lady Downe’s do so well as when planted at the warmest end of a Muscat house, where a vine was put in inadvertently, and the flavour of the Grapes from the vine under the scorching treatment was superior to anything I ever tasted under other conditions, with the same kind. Moreover, though it ripened early in August (it was fully coloured in July), the keeping qualities were of the highest order, as I have often gained prizes with them in April.

In the worst cases of scalding which I have seen the borders were rich and

cold—in one case especially, where a quantity of old leather trimmings had been mixed in the soil. In a contemporary we read of a successful grower who says that he conquers the enemy by high night-temperature. Now, we are aware of some skilful men who have been signally defeated by maintaining high night-temperature; and we know others who neither study temperature, humidity, nor any other requisite, and yet spot or any other pest is unknown to them. Some of us are ready enough to attribute success to our own skilful management, when actually we have no enemy to contend with; and a neighbour's defeat is often attributed to anything but the right cause. In all its important bearings, the real cause of "spot" on Grapes is not known. If some of our scientific friends would examine the soil in which Vines that suffer from this evil are growing, also the water applied, much light might be thrown on the matter.—M. TEMPLE.

NOTE ON LEEKS.

READ with interest Mr. Forsyth's notes on Leeks, at p. 92, and heartily agree with his remarks as to the neglect into which the culture of that useful vegetable has fallen, but I cannot fall in with his observations as to the Leek being a "stiff-necked biennial." Miller in his *Dictionary* (1731) states that Leek seed from old stools or plants degenerates. I have one of such upwards of thirty years old. The Leek (*Allium Porrum*) is a native of Switzerland, and according to Loudon was introduced into England in 1562. There is indeed every reason for believing that it was introduced prior to that time; while, as to the Onion (*Allium Cepa*), Neil observes that neither the native country nor date of its introduction to this country are known; but although the history of the Onion can be imperfectly traced in Europe, there is no doubt as to its great antiquity in Africa, since there is evidence that the bulb was known and much esteemed in Egypt 2,000 years before Christ. The Israelites, we are told, craved for the leeks, onions, and garlic of Egypt.—J. WIGHTON, *Cossey Park*.

ADIANTUM SPECIOSUM.

AMONGST the very distinct-looking groups into which the species of *Adiantum*, or Maidenhair Fern—peculiar as is the genus for its natural character—may be thrown, that of the scandent, or semiscandent ones, is perhaps the most remarkable. To it belong *A. Feei* (flexuosum), *A. digitatum*, and the subject of our present notice, *A. speciosum*, the present having the climbing habit the least developed of the three.

Of the general habit of the plant and its beauty, the accompanying illustration from Messrs. Veitch's *Catalogue* for 1875 gives a good idea. The fronds often reach a length of 3 ft., and a breadth of nearly 2 ft.; they are tripinnate, with spreading pinnæ, the pinnules of which average from $\frac{3}{4}$ to 1 in. across or more, the margin being cut into cuneate lobes, which are truncated and soriferous at the apex. The whole frond is covered with dense short hairs, which render it soft and woolly to the touch. The spreading arching habit, and deeply-lobed



pinnules, give it an appearance of elegance fully equal to that of any of its compeers, while its downy surface imparts to it an air of distinctness, the great majority of the species being smooth-surfaced. It has another peculiarity, which is shared by few other species of *Adiantum*, that of being deciduous, the fronds dying away in winter. It is a native of Peru, whence it was introduced by Messrs. Veitch and Sons, by whom it has been recently put in commerce.—T. MOORE.



DIEFFENBACHIA BRASILIENSIS.

ONE of Messrs. Veitch and Sons' novelties for the present season, and one which has received Certificates from both the Royal Horticultural and Royal Botanic Societies. The accompanying figure, which Messrs. Veitch have been good enough to place at our disposal, shows it to a highly meritorious subject in its class,—that of ornamental-leaved stove plants. It has the

same dwarfish, sturdy, well-furnished habit of growth as *D. Bausei*, the upright stocky stems being furnished with oblong-ovate petiolate leaves, averaging some 18 in. in length, and from 6 in. to 9 in. in breadth. The variegation is very striking, the ground-colour being a deep green, thickly marked or mottled over the whole surface with smallish intermingled irregular blotches of greenish-yellow and white, producing a most beautiful variegation. It is quite an acquisition amongst stove evergreen variegated plants.—T. MOORE.

THE CULTURE OF WALL-FRUITS.

CHAPTER V.—THE PEACH AND NECTARINE (*Continued*).

COMPOSTS.—In the formation of a Compost for Peaches and Nectarines, it is better to aim at one which is sufficiently strong to retain a considerable amount of moisture, without being so unduly stiff as to prevent the water from percolating freely through it. For although composts of a hot, dry, and porous nature will very often contribute at first to the production of very fruitful wood, hard and well-ripened; yet the process is a very exhaustive one, and the trees cannot be kept in anything like a free-growing and healthy condition, unless they have copious supplies of water during the growing season, and even then they are usually short-lived. Without therefore making it so stiff as to hold water in suspension, the operator will find that a comparatively strong compost, whilst involving a considerably less amount of trouble than lighter and more porous ones, will conduce more to the permanent well-doing of the trees, and at the same time afford a better means of bringing them under discipline, because they will possess a more certain power of reproduction under that discipline, owing to the greater strength of the compost.

I recommend therefore that the staple of the compost shall consist of four parts out of six of a sound and rather strong loam, not sandy, as sandy soils are apt to be poor, and we have to avoid the necessity for using stimulating materials in the early stages of growth; it should, however, be tough and full of fibre. The first six inches of a deep loam on a dry bottom, such as may often be found at the foot of steep declivities of pasture-lands, where it has probably accumulated through many centuries, from the continued washings of the sides of the hills by heavy rains, which have carried down worm-casts and other *débris* for the grass at the bottom to retain in position, and thus gradually to add to the depth of the staple. This forms the best of all loams, if the situation is such that no water can stagnate about it. Such a loam will be found very suitable for our present purpose, and it should be carted to some convenient place a year before being used, and during that period frequently turned over, for the benefit of exposing it freely to the sun and air is very great. During these manipulations, the other two parts, consisting of burnt clay, charcoal, old mortar, rubbish, if attainable, and broken bones, may be added, together with an occasional sprinkling of salt, which will help to destroy noxious vermin, and be of material and lasting benefit to the trees. All stone fruits are greatly benefited by a slight admixture of salt

in the soil, or, failing that, by a handful or two being thrown into the water whenever it may be found necessary to apply the latter.

We will now suppose the border to be prepared, the compost wheeled in, as before directed, and to be ready for planting. This should be done at the end of September, so that the planting may take place early in October. Previously to this, say in the month of August, the planter would do well to go to a good nursery and select his trees. In making his selection, he will find the benefit of a knowledge of the first principles which I have before explained; for he must reject all trees, however fine they may appear, which have a preponderance of large luxuriant shoots, and the minor ones weak and spindly, and he should select such as have the shoots equally disposed on each side of the centre, and all, as nearly as possible, of equal strength, and likely to become well-ripened hard sound wood. A knowledge of this latter character may be acquired by those who are interested in the subject, by comparing the different characteristics of growth that may be observed in trees planted under various and sometimes opposite conditions. Thus, poor soils will bring poor trees, generally, however hard and well-ripened; while, on the contrary, strong and rich soils will bring forward very grand-looking trees, but the fluent growth is treacherous, and not to be depended upon. In making selections, therefore, the moderately strong and equal in growth are those most to be desired. The planter should also reject all such trees as have been frequently headed back closely, as these are apt in after-times, to form a large excrescence at the point from which the shoot, radiate, which is not only ugly, but will often obstruct the free flow of the saps and hence induce premature decay. The best will be found to be of the second or third year, according to the size and age required, from the heading-back of the maiden tree, care having been taken not to cut back too closely. The reason for this advice I must reserve for my next chapter.—JOHN COX, *Redleaf*.

GARDEN WORK FOR DECEMBER.

FLOWERS.

THE continuous wet has greatly hindered all ground-work operations in the flower-garden, and whatever planting may yet remain undone should have the earliest attention. Take advantage of dry and frosty weather to carry out premeditated ground-work alterations; lay turf, and attend to levelling, and otherwise repairing lawns, during open weather; lay box-edgings; prune, nail, or otherwise train all hardy, deciduous plants and climbers. The grass must be frequently rolled during mild weather to keep under worm-casts, make a thorough clearing of leaves, and everywhere preserve neatness and order, for without smooth turf and solid walks, so formed that water never stands upon them, the garden can never be thoroughly enjoyed.

The planting of *Deciduous Trees* and *Shrubs* should now be vigorously pushed forward, firmly and securely staking such as may require support—this operation should never be postponed, as root-action is often seriously retarded by the plants being swayed to and fro by wind; mulch the surface, particularly in the case of all valuable plants. Prune and thin-out deciduous hardy shrubs, giving space to

the most desirable varieties, and endeavour to create as great a variety as possible, with easy and graceful outlines. At all times guard against crowding, giving to the prominent plants space for development. To plant successfully, and with any degree of certainty, calculation and forethought are requisite, studying the habits and future development of the various plants employed, and striving to give relief by a free admixture of the various colours and forms, both as regards foliage and flowering plants. Attend to the protection of all tender plants, and see that the materials employed are sufficiently open, and not likely to generate damp. Clear up leaves and stack them away, as they form most valuable compost when rotted.

In the case of *Roses*, lose no favourable opportunity to complete planting operations, staking the Standards as planted, and mulching the surface. *Roses* delight in a firm soil, and therefore should be planted solidly ; protect tender sorts.

Conservatories should now give a brilliant display of floral beauty, and at no season of the year are their bright hues more appreciated or welcome. We have *Camellias* and *Azaleas* in abundance, with the flaming colours of *Poinsettias* and *Euphorbia jacquiniæflora*, &c., which are so famous for lighting up and giving relief to groups of foliage. *Plumbago rosea* is one of the best plants at this season of the year, as are also the free and effective-flowering *Centropogon Lucyanus* and *Epiphyllums* in variety. *Eupatorium odoratum* and *E. fragrans* are both plants worth growing in quantity for decorative purposes at this season of the year. *Jasminum grandiflorum* in the shape of grafted plants, single and double *Narcissus*, *Roman Hyacinths*, with a few pots of *Violets*, are at all times welcomed for their fragrance ; *Heaths*, *Epacrises*, *Cyclamens*, *Primulas*, and that old effective and favourite plant, *Richardia æthiopica*, are also amongst the most effective for conservatory embellishment at this season. The temperature of conservatories should not be kept at the present time higher than will suit the majority of the occupants ; at the same time, it will be dangerous to allow it to fall below 50°, as it would endanger the standing of many of the most valuable plants.

Stoves : The majority of the plants in these should be still kept at rest, using fire-heat moderately, and watering sparingly. Take every opportunity to eradicate insect pests. Such plants as are required for decorative purposes must be afforded a genial temperature, so as to keep the foliage fresh, whilst at the same time they should be sufficiently hardened as not to be liable to suffer when placed in rooms.

Forcing-House : Introduce successional batches of plants as required, and see that the fermenting material is in an active state, as a moist, stimulating medium will be found congenial to development of growth. Examine *Bulbs* that are buried in ashes, removing such as are rooted ; and introduce fresh batches in succession. *Rhododendrons*, *Roses* (Teas, in particular), *Deutzias*, *Rhodoras*, *Kalmias*, *Prunus*, *Lilacs* ; *Clematis*, such as Albert Victor, Fair Rosamond, Lady Londesborough, Stella, and Miss Bateman ; *Hoteia japonica*, and various *Spiræas*, &c., may now be brought forward.

In the *Greenhouses*, *Hard-wooded Plants* should have a free admission of air on all favourable occasions, and the plants should be kept near to the glass. Any plants that show signs of damping should be elevated ; and dust with sulphur such as become attacked with mildew. Water should be given with moderation ; at the same time, the frequent surface-dribbling system is objectionable, being apt to keep the surface-soil moist, while the lower portion of the ball is dry, and the roots perishing in consequence. From this cause more particularly large specimens suffer. When water is necessary, see that it is efficiently given, so as

to reach every portion of the ball. During frosty weather, it is a safe practice to keep a correspondingly low temperature, in preference to using excess of fire-heat, and the atmosphere should be somewhat dry, to prevent damping. Be careful to avoid cold draught.

Cinerarias must be shifted as soon as the roots reach the outside of the pots, as they never recover the effects of becoming matted in the pots; place them near to the glass, and sufficiently thin them, so as to admit light and air around them; fumigate, to prevent green-fly. In potting, use a light compost of equal parts of turfy loam, rotten manure, and leaf-soil, adding sand, to keep the soil healthy and open. Give all the air possible on every favourable opportunity.

Calceolarias: The above remarks are in a great measure applicable to these, with the exception that in potting they should have a heavy, rich loam, with rotten cow-dung, and a cool moist atmosphere, with a free admission of air. At no time must they become dry at the root, for unless this is attended to they are sure to become infested with the thrips and green-fly, from which they must be kept free.

Bedding Plants: Everything in pits and frames requires constant attention to prevent damping; and a circulation of air must be secured whenever the atmosphere is dry, using caution during dull foggy weather. Water early in the morning during bright days; as little water as possible should be spilled. *Hollyhocks, Stocks, Carnations, Pansies, Wallflowers*, and similar plants grown in cold frames, must have abundant air.—GEO. WESTLAND, *Witley Court*.

FRUITS.

Vinery: If the early house was started last month, the temperature should be gradually increased; at present, the night temperature may range from 50° to 55°, and 60° by the end of the month; do not hurry them in dull weather, but during sunshine the temperature may rise to 15° higher, air being given at every favourable opportunity. Keep the air humid by syringing and sprinkling the floor of the house, especially if it is heated by flues. Tie-in the shoots as they advance, and stop them as soon as the bunch is visible. Prepare for starting the succession-house by the middle of the month. All vines in the late houses should be pruned as soon as the crop is cleared. When *Pot Vines* are in full leaf, begin to feed them with liquid manure occasionally; both this and water should always be used of the same temperature as that of the house they occupy.

Pines: Succession-plants in dung-pits that are not otherwise heated should have the linings turned and fresh stable-manure added, so that the temperature does not fall below 65°; do not syringe them or give any water at the root for the present; give a little air in fine weather, closing early in the afternoon, and covering the pits every night. Those plants intended for starting into fruit next month should have the temperature increased to 80°, with a moderately dry atmosphere; and if the bottom-heat is on the decline, the bed should be turned and the plants replunged. If any strong suckers are making their appearance on these plants, they had better be removed at once. Plants in fruit should not suffer from drought; keep up a moist high temperature by sprinkling the house, and syringe the plants with the exception of those in flower; give a little air from the back of the pit in fine weather, but close early in the afternoon.

Peaches and Nectarines: Apply fire-heat with caution to the early house; do not let the night temperature exceed 50°, and permit a rise of 10° or 15° during sunshine; syringe the trees, and close early in the afternoon. This treatment should be continued till the blossoms begin to expand. Cover the outside borders,

for the purpose of warding-off frost and drenching rains. Get the trees tied in the next house, and make all ready for starting them by the end of the month.

Cherries: If these fruits are required very early, the trees should be got under glass by the end of the month; plunge the pots, and top-dress them with fresh loam and rotten manure. A temperature of 45° at night is sufficient to begin with, and the requisite moisture must be maintained by syringing the trees. Give air always through the day during sunshine. The *May Duke* and *Frogmore Early Bigarreau* are the best for early work.

Strawberries in Pots: Some of the early varieties, such as *Keens' Seedling*, *Black Prince*, and *La Grosse Sucrée*, may be placed in the forcing-house toward the end of the month; no water should be given them for a time, except the soil is very dry.

Hardy Fruits: The heavy rains of last month have probably prevented many from getting forward with planting, root-pruning, &c., as advised last month; if, therefore, the weather proves favourable, these works should be proceeded with at once, before severe frost sets in. Proceed with the pruning, nailing, &c., of all wall-trees at all times when the weather is favourable, beginning with *Pears*, *Plums*, and *Cherries*. See previous directions in regard to cleansing the trees from scale and moss. All small fruit-trees may now be pruned, with the exception of *Gooseberries*, and the first opportunity should be embraced of wheeling manure on to the quarters, in readiness to be forked-in about the trees when the weather is open. Trench ground for new plantations, as well as for planting *Strawberries* in the spring. Protect *Figs* with mats or fern; or if the trees are fan-trained, unnailed them, and bring the branches to the bottom of the wall, and cover with stable-litter. Pay attention to the Fruit-store, and see that no decayed or spotty fruit remain in the room. No air need be admitted after this time, except the store is damp; if so, air may be given at times in dry weather.—J. POWELL, *Frogmore*.

VEGETABLES.

Very severe weather, if it comes at all, generally visits us during the month of December; it will be well, therefore, to make every preparation for it, as however difficult it may be to prognosticate aright, there seems to be a very general opinion that a severe winter is at hand. During a mild period, therefore, place a little additional soil up to and around the leaves of *Celery*, this not alone to make up for the slight settling-down of the soil, after so much rain-fall, but also as a security to such additional superficial, or leaf-growth, as the plants may have made since the operation was performed. Take up and store also *Jerusalem Artichokes*, *Horse-radish*, &c., for more immediate use. *Cardoons* may in like manner be stored away in sand, and all the necessary means undertaken to insure a supply of *Lettuces* and *Endive*. Cut and store such late *Broccoli* as may have hearted. Cover over plants of *Cauliflowers*, where the necessary means exist; and if snow is anticipated, place some kind of protection over *Parsley*, to guarantee a supply. This last and *Mint*, *Tarragon*, *Chervil*, and *Fennel* may also be boxed, or potted up and placed in warmth, in readiness for the early demands.

Hot-beds should be made up during the latter part of the month, whereon to plant *Potatos* for the earliest supply, and to sow *Carrots* (Short Horn) upon for a like purpose; goodly-sized beds should be made to insure that a goodly bulk of heat be engendered and retained; and this heat must be allowed to moderate itself down somewhat permanently before the intended crops are planted or sown, as neither crop requires a great heat, though a moderate and constant

degree is of material importance ; as soon as superficial growth is developed, let air be given carefully and with freedom.

The *Mushroom*-house will need constant attention, now that it should be carrying crops. These latter will require constantly periodical syringings, or dampings over-head with tepid water. Continue to make up fresh beds, as quickly as the necessary materials for that purpose can be got together ; they must be moderately dry, and as I have so often urged, well beaten down ; never spawn any until no doubt exists that a permanent heat not exceeding 70° or 75° is assured. Place into this structure the necessary supplies of *Seakale* for producing a constant or successional crop, the crowns being taken up carefully from the open ground and buried in soil therein, and kept well watered and away from either fresh air or light. *Chicory* may be also placed for a like purpose, and to insure a crop of well-blanching material for an aid to the salad-bowl. Sow *Mustard* and *Cress* for a like purpose.

The general or main work in this department should consist of the necessary digging-up and trenching of all vacant ground. Manure heavily at all times when practicable, and dig or trench deeply, according to the capacity of the sub-soil to be worked upon. Finally, get all such operations as forward as possible, and so that, as Christmas and the New Year approach, all may be done.—WILLIAM EARLEY, *Valentines*.

THE ROYAL HORTICULTURAL SOCIETY & GARDENING.

THE able remarks of Mr. W. Paul in the FLOREST AND POMOLOGIST (p. 241) in regard to the Royal Horticultural Society and its influence on gardening, are but the "clothed thoughts" of many horticulturists, at least in part. It is very greatly feared that, however much one may wish to see gardening advanced through this medium, the results cannot at the best be very great. It is not in the Academy, but in the Studio, that genius searches out its favoured ones, through whom higher art attainments are to be displayed, from amongst its votaries. The trumpeters sound to the charge, but the single warriors do the deeds of daring which shed lustre on the united arms. So it is in gardening. It is in the many gardens, the workshops, where success will have to be wrought out, if at all, and that amongst all of them, from the best-furnished down to the most lowly. Let, therefore, no one mistake the facts. Horticulture is making rapid strides, not, as some would evidently have us suppose, by the light of any individual luminary, but rather, and let this be well marked, as the outcome of a spontaneously diffused desire for the beautiful amongst the masses, and a worthy system of emulation which has sprung up amongst gardeners themselves. To doubt these facts, or to be blind to their existence, or to pooh-pooh them, would tend to strangle the rising genius, which would recoil on those who attempted it. Let no one expect too much from the Royal Horticultural Society. Above all, let no one assume it to be the home of all the sciences. Treat its Directors, the Council, as men whose intentions are earnest, aiding as far as they are able the broad-cast advance of the art ; not as demagogues who can countenance no advance but such as is made in accordance with their exclusive dictum—as some would lead us to suppose. It has been my happy experience

during the past few months to have been associated with the originators of several new Floral Societies, some of which are now established in the densely-populated metropolis, and the feeling of these originators, the masonry of kindness displayed and maintained, should put to shame those who quarrel so loudly over these "dry bones."

Depend upon it, horticulture is, as Mr. Paul rightly puts it, "a Science"—an elevating and a worthy science. It is, in fact, both a Science and an Art, and has come to be such through an association of cultivated taste, elevated sentiments, and an innate love—the truest of all promptings—of the really beautiful. The Royal Horticultural Society may aid this Science, may assist in diffusing a greater and increased love of this Art, and we must all hope that it is yet destined to take the lead in this matter; but it can no more stay their onward march than it can "shut the flood-gates of thought." Unfortunately, however, it is capable of self-injury, of wounding and lacerating its own fair form, and bringing injury into its personal domain, in opposition to all that is apposite to its primary intentions and formation. Horticulture in 1875 needs not the prestige of titled names or of Royal Societies to insure its ultimate prosperity; the former may be good for the latter, but in the earnest warfare to which I have pointed, horticulture needs no extraneous helps. Sorry indeed would be its future, were this the case. The past has given ample proof that to raise the order we must elevate the individual. No society can advance the legitimate wage-price, or teach individual members; hence practical workers must aid and emulate each other, and they who lend their thoughts and abilities to this end are the true gardeners, and the best friends of gardening, *i.e.*, horticulture.

The wretched debt so frequently referred to will never permit the Royal Horticultural Society to assume its legitimate position, whilst it hangs like a mill-stone about its neck. Temporary help at 5 per cent. interest does but lay aside the load for a time, that it may become weightier in the future. If the Society is worth purchasing at such a price, then, even though a Council may not be justified in making the proposal or acting in the matter, cannot individual Fellows apply to all well-wishers of the cause for subscriptions sufficient to pay off this incubus. Thus only can the Society be assured of another fair start, or one holding out a hope of even moderate success.—WILLIAM EARLEY, *Valentines*.

PEARS FOR THE NORTH OF SCOTLAND.

THE two Pears named below—*Beurré Navez** and *Comte de Lamy*—have done so well with me in this and in former seasons, that I venture to recommend them for similar cultivation. They are both fine-looking fruit, and the quality, especially that of the former sort, is excellent. It ripens

* *Beurré Navez* is described by Mr. Scott as follows:—"Roundish turbinate, bossed near the top; skin greenish-yellow, slightly dotted with grey, patched and clouded with brownish russet, and often tinged with rose on the sunny side; stalk long and bent, sometimes short and straight, inserted in a wide knobbed cavity; eye large, half-closed, and rather deeply set; flesh white, firm, half-melting, juicy, sugary, and acidulated, and with a delicate, musky perfume. The tree forms one of the handsomest pyramids possible, either on the pear or quince stock, and bears abundantly."



J.L. Macfarlane del.

Pear

Louise Bonne d'Avranches Panachée.

immediately after *Louise Bonne of Jersey*, which with me has this season been particularly fine, both on espaliers and standards. *Marie Louise*, under similar treatment, is also large, russety, and fine. The year 1875 will be long remembered in the North of Scotland for its large crops of Pears, and the high quality of the fruit.—J. WEBSTER, *Gordon Castle*.

LOUISE BONNE D'AVRANCHES PANACHÉE PEAR.

WITH AN ILLUSTRATION.

ONE of the most useful of dessert Pears in its Season—October—is the *Louise Bonne of Jersey*, one of the synonyms of which is *Louise Bonne d'Avranches*. Of this excellent Pear, that which we now figure is a variety which originated, as Dr. Hogg tells us, in a bud-sport, and in consequence of its beautifully marked fruit was distinguished as the striped variety (*panachée*). A glance at our figure will show its leading peculiarity, and will also indicate how desirable it is, that so handsome a fruit should be freely cultivated, so as to become a frequent ornament to the dessert-table.

The *Striped Louise Bonne*, as may indeed be concluded from its origin, is in all respects similar to the well-known *Louise Bonne of Jersey*—or *Bonne Louise*, as some say it should be called. It is a good grower, and a good bearer; it succeeds well as a pyramid on the quince stock; it is invariably of good quality and flavour; it may be had for some time in use in the autumn season; and a good sample nicely coloured forms a dish of most tempting fruit for the table, and one, moreover, which will bear the test of trial, seeing that its quality equals its appearance.—T. MOORE.

THE POLYANTHUS.

UNDER this heading I intend to treat of the fine old named varieties that were once pretty common, but now unhappily very scarce. Here are a dozen varieties that twenty years ago were somewhat generally grown:—Alexander (Pearson), Beauty of England (Maud), Cheshire Favourite (Sanders), Duke of Northumberland (Thompson), Earl of Leicester (Hufton), Exile (Cronshaw), George the Fourth (Buck), Highland Mary (Craiggy), King (Nicholson), Kingfisher (Addis), Lord John Russell (Clegg), and Princess Royal (Collier). Add to these Bullock's Lancer and Nicholson's Bang Europe, and we have the cream of the varieties that were grown by the past generation of florists. Alas! how difficult to obtain any of them now. I have Cheshire Favourite, Exile, and Lancer, and beyond the possession of these I am not able to get. These, with Kingfisher and Beauty of England, put in an appearance at the meeting of the National Auricula Society at Manchester, but no one appears to have them in quantity. I am afraid that hard propagation has had something to do with bringing about a certain deterioration of constitution; and

any one who would succeed with these named Polyanthuses must pay them very great and constant attention. I am confirmed in this opinion by a letter just received from a Manchester cultivator.

And yet, after all, a highly finished Polyanthus, after the style set up by the old florists, is a lovely flower, and it is incumbent on florists to set themselves to work in order to promote its improvement. Some of the Northern growers have taken seed from the named sorts, and among dozens of seedlings no advance has manifested itself. But the hand of the cultivator must not be stayed, and if he be persistent in his endeavours, he will eventually succeed. The demand now being made for named Polyanthuses is a proof that they possess a greater interest than they did a few years ago. I have made crosses with Lancer and Cheshire Favourite, and with the last and Exile, and I hope to get something good; but as a rule, seedling Polyanthuses are very disappointing. Two years ago a keen old florist, who has made the Polyanthus a speciality for many years past, sent me a box of seedlings raised from seed taken from a few of the finest flowers; but some of the greatest rubbish sprang from them, and it was remarkable to see the number of pin-eyed flowers that appeared among them.

A little caution is now necessary on the part of purchasers of named Polyanthus. I have known mere seedlings offered as the old named varieties, to the great disappointment of the purchaser. Unfortunately there are those in floriculture who in this way prey on the non-vigilant grower. On the other hand, lists of named Polyanthuses are now being offered that in several instances lack the fine qualities that distinguished the flowers of a quarter of a century ago. We want to go forward rather than backward; a large measure of Maddock's somewhat loose ideal is as yet unrealised, and till a nearer approach is made to it, the energies of raisers should not be suffered to abate.—R. DEAN, *Ealing*.

CROSSING AZALEA MOLLIS AND INDICA.

IN 1872, I had six varieties of the showy hardy *Azalea mollis* from M. Van Houtte, named as follows:—*Isabelle Van Houtte*, dark nankeen colour; *Madame Camille Van Langenhone*, white, striped with rose and carmine; *Nonpareil*, white, bordered with rose, a fine variety; *Ebenezer Pyke*, buff-yellow; *Centi Striatella* and *Baroness Rothschild*. I find that all the varieties cross very readily with *Azalea sinensis*—the yellow and white varieties, and I have many healthy seedlings this year from these crosses. I have likewise this season set, with *mollis*, some flowers of the fine strong-growing orange-scarlet Indian *Azalea Stella*, and the seed seems to be swelling well, so that there is a chance of a new strain in *Azaleas*.

When planted out in masses the varieties of *Azalea mollis* must have a grand effect in the shrubbery, from the size of their flowers, and their bright colours. All my plants of it are yet in pots, but they have stood out all the winter unprotected, so that they are as hardy as any of the *Ghent Azaleas*.—WILLIAM TILLERY.

ON RAISING THE CLEMATIS FROM SEED.

AS a hardy plant now indispensable as a climber in shrubberies and for clumping, I may instance the *Clematis*, of which it is very easy to raise a large collection from seed in a short time. Last year, I seeded some of the early-flowering sorts, such as Albert Victor, Lady Londesborough, Lord Londesborough, Mrs. James Bateman, Miss Bateman, Standishii, and Azurea grandiflora, and when the seed was ripe, sowed it in the autumn. None of it vegetated till this spring, for the seed is very hard, and requires time to vegetate, even when in a slight bottom-heat; but the young plants have made wonderful progress this summer, and a few are now showing a bloom on them. It may be said that as plants of all the best varieties of *Clematis* can now be procured from nurserymen at a reasonable rate, there is no use in trying to raise seedlings of them. There is, however, an excitement in trying to raise some new sorts, of good properties, and in a large collection of seedlings this may be expected, as they gradually come into bloom.—WILLIAM TILLERY, *Welbeck*.



ACALYPHA WILKESIANA MARGINATA.

MOST lovers of ornamental plants are now familiar with the aspect of a broad-leaved plant, with foliage of a bright coppery tint, usually shown at exhibitions, under the name of *Acalypha tricolor*, but more correctly called *A. Wilkesiana*. The present subject is nearly related to that

plant, but is nevertheless very distinct. The growth in either case is stoutish and vigorous, and the foliage large and long-petioled. Here it is ovate-acuminate in outline, somewhat narrowed near the base, and beset on the margin with very distinct and rather distant saw-like teeth, "into each of which run out one or two branches from the marginal vein." The leaves have the centre parts of an olive green, with a border variable in width, but averaging over an eighth of an inch, of a pretty rose-colour. Those who have seen it in the wild state speak of it as a very beautiful shrub, never even in its rankest growth losing its variegation. As a free-growing plant, it is likely to be of considerable value amongst those possessing ornamental foliage. Being a native of the Fiji Islands, it requires stove-culture. We are indebted to Mr. B. S. Williams for the use of the illustration.—T. MOORE.

ZONAL AND NOSEGAY PELARGONIUMS.—II.

THE scarlet and crimson sorts, most numerous represented at the exhibition which formed the subject of my previous communication on these flowers (p. 259), served to bring out in a remarkable degree the very fine quality of the newer varieties raised by Dr. Denny and Mr. J. R. Pearson. These two celebrated growers have each taken his own line; the former paying attention to the improvement of the finely-formed Zonals; the latter, the nosegay type. Dr. Denny, starting with form, substance, and size in the pip, has gone on to noble trusses, of large size and great beauty. On the other hand, Mr. Pearson may be said to have commenced with size of truss, and he has gone on improving the quality of pip till he has almost or quite rivalled Dr. Denny in the exquisite shape, substance, and rotundity of his flowers. And what has been so well done will no doubt serve as inducements for these accomplished florists each to make a new departure, and work out another series of important results.

In giving my selection, commencing with the flowers having pale hues of scarlet or crimson, I commence with *Mrs. J. George* (George), bright orange-salmon scarlet, very fine pip, and noble truss; *Mrs. Whiteley* (Pearson), bright scarlet, very fine; *Mrs. Laacroft* (Pearson), bright pale red, fine and effective; *Mr. W. Brown* (Pearson), pale bright rosy-crimson, very fine; *John Gibbons* (Pearson), bright shaded scarlet, very large truss; *Idalia* (Denny), scarlet, flushed purple and orange, finely formed pip and good truss; *Eros* (Denny), very bright scarlet, showy white eye, extra fine; *Dell* (Pearson), bright orange-scarlet, fine pip and noble truss; *Lancelot* (Denny), rich orange-scarlet, very fine truss; *Harriet Helen* (Pearson), very bright orange-scarlet, fine pip and large truss; *Ænore* (Denny), soft glowing scarlet, pip and truss, extra fine; *Brassidas* (Denny), large bright orange-scarlet, fine pip and truss; *Orion* (Denny), bright orange-scarlet, flushed with purple, fine pip and noble truss; *Percy Cooper* (Pearson), clear pale orange-scarlet, fine pip and truss; *Thomas Hood* (Perkins), very bright, large rounded pip; *Corsair* (Pearson), bright and striking; *John Fellowes* (Pearson), cerise-scarlet, very fine indeed; *Rienzi* (Denny), fine bright scarlet, pip and truss striking; *Richard Cœur de Lion* (Denny), bright orange-crimson, fine and bold.

Those having deeper shades of colour were more numerous represented, and

my selection of the best varieties comprises:—*Mrs. Huish* (Pearson), shaded cerise-red, very fine truss; *Mrs. Vincent* (Pearson), deep crimson, fine pip and large truss; *John Fellows* (Pearson), very bright orange-crimson, immense truss; *Rev. F. Atkinson* (Pearson), dark scarlet, very fine pip and wonderful truss; *Salathiel* (Denny), bright orange-crimson, very fine pip and large bold truss; *Lavinia* (Denny), clear bright orange-crimson, very fine form and large truss; *Aspasia* (Denny), dull crimson, large truss; *Oberon* (Denny), shaded bright crimson, very fine pip and immense truss; *Portia* (Denny), fine bright crimson, quality high; *Alonzo* (Denny), orange-crimson, flushed with purple, fine pip and large bold truss; *Imogen* (Denny), crimson, much flushed with purple, splendid pip and large truss, distinct and very fine; *Zuleika* (Denny), bright pale orange crimson, flushed violet, great refinement of character; *Æneas* (Denny), rich deep orange scarlet, very fine pip and noble truss, extra fine quality; *Colonel Holden* (Pearson), deep crimson, tinted purple, very fine; *Minerva* (Denny), deep bright orange-crimson, flushed with purple, fine pip and bold truss; *Douglas Pearson* (Pearson), bright deep crimson, extra fine quality; *H. R. Clifton* (Pearson), purple orange-crimson, extra fine; *Diana* (Denny), showy and striking; *Miss Sanders* (Pearson), a very large hybrid nosegay, rosy crimson, flushed with purple, and noble truss; *Prince Bismarck* (Burley), dark crimson, fine and effective; *Dr. Roch* (Boucharlat), bright orange-red, distinct and striking; *Lord Macaulay* (Denny), crimson, fine shape; *Salathiel* (Denny), rich bright crimson, extra fine; *Globosa Major* (Denny), dark bright crimson, a huge nosegay for decorative purposes; *Heartsease* (De Waldie), a distinct and taking variety, colour purple-crimson, fine form, small truss; *Wellington* (Denny), very rich and bright in colour; *The Shah* (George), bright crimson, very large pip; *Cassandra* (Denny), bright crimson, fine bold pip; and *Sir H. S. Stanhope* (Pearson), very dark crimson, fine pip and truss.

Such, then, are my selections of the various hues of colour of the best types of Zonal Pelargoniums. Some supplementary remarks which I had hoped to have added to these last must be reserved for want of space.—RICHARD DEAN, *Ealing, W.*

GARDEN GOSSIP.

THE *Pelargonium Society*, the establishment and successful labours of which during its first year of existence we have already noticed, has just issued its Schedule for 1876, from which we find that Prizes are offered for competition on June 7 and 8, for 6 Show Pelargoniums; and on July 19 and 20, for 12 Zonal Pelargoniums and 4 Zonal Pelargoniums, of the "Florists' Class;" for 12 Zonal Pelargoniums of the "Decorative Class;" for 30 Zonal Pelargoniums and 18 Zonal Pelargoniums, "irrespective of class;" for 1 Zonal Pelargonium, "irrespective of class," to be shown for novelty of colour; for 6 Double-flowered Zonal Pelargoniums; for 1 Double-flowered Zonal Pelargonium, with white flowers; for 1 Double-flowered Zonal Pelargonium, of any colour, except white; for 3 Hybrid Ivy-leaved Pelargoniums; for 6 Ornamental Cape Pelargoniums; and for 1 Hybrid Pelargonium, of distinct and ornamental character. The Prizes are open to competition amongst Members of the Society only.

— OUR gardens owe much to the labours of the successful hybridisers, amongst whom of late years Messrs. Veitch have taken the lead, especially amongst Orchids. M. Bausé has also been most successful, and the Caladiums, Coleuses, Dieffenbachias, and other plants raised by him at Chiswick, should have secured him a medal of honour from the Royal Horticultural Society. M. Bausé has again come to the front, with a batch of *Hybrid Dracænas*, raised in the nursery of Mr. Wills, at Anerley, of

which the number is legion, and the variety is astonishing, there being amongst them some wonderfully beautiful novelties. They comprise varieties with broad, medium, and narrow leaves, bronzy and green, with crimson, rose, pink, violet, and white variegations, and with drooping, spreading, and erect habit—these features being blended in all sorts of combinations. The effect of a whole house full of these grand novelties was quite startling.

— THE veteran pteridologist, Mr. John Smith, has just published his matured views on the *Classification of Ferns*, in a handy volume of some 429 pages, under the title of *Historia Filicum* (Macmillan), and illustrated by thirty Plates drawn by Fitch. Mr. Smith's primary division is into eircinate Ferns and Ferns not eircinate, the former including nearly all known genera, the latter the three genera of *Ophioglossaceæ*. The first group is then broken up, as usual, into those with the ring of the spore-cases vertical (*Polypodiaceæ*), or horizontal-central (*Gleicheniaceæ*, *Hymenophylleæ*), or horizontal-apical or incomplete (*Schizaceæ*, *Osmundaceæ*), or wanting (*Marattiaceæ*). Then comes in Mr. Smith's special feature of classification; the *Polypodiaceæ* are divided into *Eremobrya*, with "fronds solitary, lateral, and articulate with the caudex;" and *Desmobrya*, with "fronds terminal, solitary, fasciculate, adherent to the caudex;" while the *Marattiaceæ* form the third division, *Scaphobrya*, with "fronds terminal, rising between the stipuliform or socket-like appendages, and articulate with the caudex." This mode of division naturally breaks up many of the old associations of species brought together by similarity of fructification, and appears to be, at least, open to as many and as strong objections as the use of any other single character. Under these three divisions there are ranged 220 genera, of which the characters are given, and the names of the species if a few, or those of a selection, where numerous. The work will be extremely useful to students of Ferns, from the structural observations it embodies.

— THERE is no lack of *Books on British Ferns*. Mr. Newman has lately issued what he calls the Fifth, or People's Edition of his *History of British Ferns* (Van Voorst), a small volume, of handy size for the pocket. The merits of Mr. Newman's writings on Ferns are well known; it, therefore, will suffice to say that this small book is a modern epitome of the larger one. It is reliable as to the information it gives, and that is no small praise. There is a vein of egotism throughout it which, to say the least, is amusing, as, for instance, in the following passage:—"This final edition, like those which have preceded it, will doubtless raise up its host of imitators; to all such I most cordially wish success. But it is a still greater satisfaction to me to know, that by introducing this new study, I have afforded pleasure to thousands and pain to none; wherever I go, there are Ferneries in the open garden, in the greenhouse, or the dwelling-house; and Newman's *Ferns*, albeit sometimes under another name, has become a household book." It is nevertheless, as we have already said, a good book, and we wish it success.

— A THOROUGHLY useful book to young gardeners who venture on the higher branches of study is *Baker's Elementary Lessons in Botanical Geography* (Reeve and Co.), which gives in little compass what could only otherwise be obtained at considerable expenditure of time and attention. Its object is well explained in the preface, where the author remarks that he felt it was extremely desirable that gardeners and other learners in biology should be encouraged as much as possible to acquire comprehensive and correct ideas of the laws and leading facts of plant-distribution. The matter originally appeared in a series of papers in the *Gardeners' Chronicle*, and has since been reprinted, with some alterations. We strongly recommend it to the notice of students.

— SOME of the best of the *Herbaceous Phloxes* will be found among the following:—White Lady, the best of the whites in the decussata section; Madame A. Dumesnil, white with purple eye; Madame Maisonnette, white with crimson eye, and somewhat flushed; Mademoiselle Marie Saison, white with purple eye; Coquette du Parc de Neuilly, white with bright purple eye; Eugénie Immer, white with delicately-tinted purple eye; Comtesse de Turenne, white with delicate purple eye, a very chaste-looking flower; Coccinea, a bright but dark earmine-crimson; Resplendent, earmine-scarlet; Lothair, light salmon-scarlet with dark eye; Madame Caillard, bright salmon with dark eye; Rivière, fine salmon-scarlet with dark eye; Mons. Jigne, rosy salmon with dark eye; Mademoiselle Hermine de Turenne, purple-crimson; Madame Godfrey, bright purple; M. Guldenschueh, rosy pink with dark eye; Menotti, lilac with white eye, very distinct; and

Madame Durenne, lilac with broad dark purple centre. These are all fine, of good habit, and striking colours.

— THE finely variegated *Fuchsia Sunray*, which is believed by many to have originated as a sport, is, it appears, a seedling raised by Mr. G. Rudd, Undercliffe, Bradford, who has also produced some other fine Fuchsias. It was obtained from the variegated Cloth of Gold, fertilised with pollen from a single Fuchsia having a white tube and sepals and a red corolla. Mr. Rudd observed a spot of white on a leaf of one of these seedlings, and finding it to be a promise of variegation, he, in the autumn, cut the plant back to this particular leaf, and the following spring it broke out into the beautiful variegated form it has never lost.

— A NEW Hybrid *Tacsonia*, which it is proposed to name *Tacsonia Andersoni*, has been raised by Mr. Anderson, of the Gardens, Sowerby House, Hull, being a cross between *T. Van Volxemii* and *T. insignis*. The colour is intermediate between those of the two parents, more a scarlet than either, the size of the flowers being from 5 in. to 6 in. in diameter. Out of about forty plants raised from two seed-pods, all, with one exception, have the divided leaf of the male parent. The internal conformation of the hybrid flower is very curious. The calyx, corolla, and corona are all normal, but the stamens, instead of bearing anthers, are surrounded by petals. Beneath, the filaments, previous to their separation one from another, form a tube, from whose edge springs an additional corona, just as the corona springs from the flower-tube at the base of the petals in ordinary cases. We have here not only a very interesting malformation, but the germ of a double *Tacsonia*.

— THE fine hybrid *Lilium Purity*, a cross between *L. auratum* and *speciosum*, raised by Mr. Thomson, and of which little has been heard since it was exhibited before the Floral Committee in August, 1870, and received a First-class Certificate, has flowered vigorously this year at the Knap Hill Nursery, and proves to be a good acquisition. It has quite the habit and aspect of a vigorous large-flowered form of *L. speciosum*, having lanceolate leaves and large flowers, the segments of which are at first spreading, then reflexed, the ground-colour pure white to the very base, and spotted with rich carmine-crimson dots and papillæ. The fragrance is intermediate between that of the two parents. It is a distinct Lily, and a well-marked improvement on *L. speciosum album*.

— A PAPER on the *Destruction of Chlorophyll by Light*, by Dr. Askenasy, has recently been published in the *Botanische Zeitung*. He finds that the parts of fruits and plants most deeply coloured are those most freely exposed to light; and that fruits of the same kinds if ripened in the shade remain green to the end. His experiments, so far, have not led to the discovery of anything positive with regard to the active agents in these effects, and their physiological importance. The facts mentioned by Dr. Askenasy have been well known to gardeners for years, and in cases where the value of fruit depends upon its appearance shading and exposure have often been resorted to.

— OF the new *Pea Dr. Maclean*, Mr. Bailey of Shardeloes writes:—"It is a remarkably fine *Pea* of the Turner's Prolific type, grows about 3 ft. high, is very productive, with pods which are large and well filled, and produced from the bottom to the top of the haulm. It is of excellent flavour, and is altogether a first-class *Pea*."

— ONE of the most interesting objects in the well-conducted kitchen-gardens at Thoresby Park, as we learn from the *Gardener*, is a *Wall of Warrington Gooseberry-trees*. They are planted some two or three feet asunder, against a north wall, and trained vertically, the branches being about 4 in. apart; the wall is now almost entirely covered with them. Mr. Henderson states that this wall of Gooseberry-trees is of more service to him than all his other bushes put together, the crops being certain, regular, and conveniently preserved on the trees till late in the autumn. The branches, having a considerable vertical extension on a wall 12 ft. high, are not disposed to make gross lateral growth; and the summer treatment consists in simply shortening back the breast-wood, which in winter is finally pruned to short spurs in the usual way.

— THE new *Pelargonium Beauty of Oxton* is a splendid companion plant to that called Queen Victoria. The varieties of this crimped-flowered class, such as Queen Victoria, Captain Raikes, or Prince of Pelargoniums, are amongst the handsomest and most useful of the family; their petals are so numerous that they lap over each other, and they are of such substance, and so much crimped, that they appear double. Queen Victoria is of a rich vermilion, the petals broadly margined with white. Beauty of Oxton is also margined with white, and beautifully fringed, but the upper petals are rich maroon darkly blotched, and the under ones dark crimson, shaded with maroon; the flowers are particularly large and full. These two varieties may be strongly recommended for decorative purposes.

— AT Mr. J. Fraser's Nursery, Lea Bridge Road, we noted, during the past summer, some *Verbenas adapted for Bedding*; they were German varieties, and seemed to have inherent vigour of constitution, such as our English varieties once had, but which many of them now lack—a fact which, perhaps, accounts for the neglect into which they have fallen. Some of the most distinct were:—Baron von Bookheim, bronzy scarlet; Rudolph Brandt, purple, with white eye, somewhat recalling the fine old bedding plant of yore, Lantana Selloana; Moritz Schulz, deep claret, with small white eye; Baron von Apraxine, rich violet; Hofgartner Noak, rosy pink, pale scarlet eye; Baronin von Paussinger, rose with crimson eye; Alemaine, deep rose pink with white eye; Theodor Emmel, light vermilion, with white eye; Paul Vas, deep scarlet with dark eye; La Loire, maroon with white eye; and Gruss van Strassburg, orange-scarlet with large white eye. These may be recommended as well worth a trial.

Obituary.

— M^R. ALBERT BRUCHMÜLLER, one of the most enterprising and perhaps most successful collectors that ever entered South America, was killed in Ocaña some time early in August last, by a French criminal, who had been a soldier in the French Army. A revolution had been going on in the United States of Colombia, and some parts of that country were in a state of anarchy. Mr. Bruchmüller was a native of Magdeburg, in Prussia, and some few years ago entered the service of Messrs. Low and Co., of Clapton. As a plant collector he was eminently successful, sending home to the Messrs. Low, and subsequently to Mr. Bull, several fine new Orchids, and immense quantities of the best known sorts. His extensive consignments to Mr. Bull may be said to have done a great deal towards the great reduction in the price of Orchids which has taken place within the last few years.

— M^R. ALEXANDER BOREAU died recently at Angers, at the age of 72. He was best known as the author of the useful *Flore du Centre de la France*, of which three editions have been published. He was one of the school of critical botanists.

— M^R. W. DE SCHÖNEFELD, who has filled with admirable ability and zeal the post of Secretary to the Société Botanique de France since its foundation in 1854, died recently. The Society and botanists in general were under special obligations to this distinguished man for his services in reference to the publications of the Society.

— WILLIAM PLANT, Esq., M.D., died at his residence, Monkstown, on October 23. The name of Dr. Plant had been associated for more than half a century with the most successful cultivation of his three specialities—Auriculas, Carnations, and Tulips. As a grower of Auriculas, in particular, he had few, if any, equals, certainly no superior; and to see his Auricula-frames, and again, his marvellous Tulip-beds, in their flowering season, was a sight worth going a long way to see. Dr. Plant was, we believe, at his death the oldest member of the Royal Horticultural Society of Ireland, having been for more than forty-five years a member of its Council; he had arrived at the ripe age of 85 years.

INDEX.

- ACALYPHA Wilkesiana* (tricolor) marginata, (woodcut) 283.
Adiantum (Capillus-Veneris) *Lüddemannianum*, 238; *A. princeps*, 238; *A. speciosum*, (woodcut) 271.
Agapanthus Mooreanus, 216.
Althæa frutex, (woodcut) 21.
Amaranthus Henderi, 46.
Amaryllis culture, hints on, 177.
 Amateur's Guide, Suttons' Miniature, 47.
Anemone, double scarlet poppy, 168.
 Annuals for Spring-bedding, 196.
Anthurium Scherzerianum, 23.
 Ants, Black, removal of, 240.
 Apple, French Paradise, (col. plate) 97; Lady Henniker, (col. plate) 61; Lane's Prince Albert, (col. plate) 233.
 Apples, frequent use of, 119; late-keeping, 139; new, of 1874, 42.
 Aquarium, Liverpool, 24; Royal, at Westminster, 47, 262.
Artocarpus Cannoni, (woodcut) 210.
Asparagus, early forced, to obtain, 70.
Asplenium feralaceum, 238.
Auriculas, seasonable notes on, 38; notes on, 126, 165; Alpine, 180; show, and how they are shown, 137.
Azalea mollis and *indica*, crossing, 282.
 BEAN, dwarf French, Canadian Wonder, 68.
 Bean, Seville Early Longpod, 191.
Beaucarneas, watering of, 263.
Begonia, Emperor, (col. plate) 265; B. Model, (col. plate) 109.
Begonia's, Schmidt's new race of, 239.
Bertolonias, new, 143.
 Birch, decorated with *Jasminum* and *Lonicera*, 68.
Blumenbachia coronata, (woodcuts) 136.
 Botanical Geography, Baker's Elementary Lessons in, noticed, 286.
 Botany, Elements of, noticed, 24.
 Bouquet-making, 22.
Bonvardias, winter-flowering, 45.
Brahea filamentosa, 238.
Broccoli, early winter, preserving, 70.
 Broom, the garden, and how to use it, 212.
 Burbidge and Baker's *Narcissus*, noticed, 140.
 Bush-trees, new style of planting, 262.
CAIOPHORA absinthifolia, 136; *C. coronata*, 136.
Calanthes as Decorative Plants, 5.
Calceolaria, wintering the, 254.
Camellia Mathotiana rosea, 118.
Campanula Smithii, (col. plate) 209.
 Carnations, notes on, 222.
Celery, Col. Clarke's, 46.
Celosias as decorative and exhibition plants, (woodcut) 98.
Cerasus caproniana ramunculiflora, 144; *C. Sieboldii roseo-plena*, 144; *C. Watererii*, 144.
Chamærops excelsa, (woodcuts) 123; *C. Griffithii*, (woodcut) 102.
Choiranthus Dillenianus, 188; *C. Marshallii*, 187; *C. ochroleucus*, 187.
Choiranthus, the perennial, 187.
 Cherries, Gean, Early Lyons, (col. plate) 193; Ohio Beauty, (col. plate) 193; double-flowered, 144.
 Cherry-forcing, 1.
 Chestnuts of 1873, preserved alive, 47.
 Chlorophyll, destruction of, by light, 237.
Chrysanthemums, large-flowered, 23.
Cinerarias, new, 104.
Clematis, Jackman's Exhibition of, at Regent's Park, 142; raising from seed, 283; new double, Belle of Woking, 189; *C. indivisa lobata*, 102, 119; *C. montana*, 119; *C. Willisoni*, new double, 191.
Clianthus magnificens, hardiness of, 147.
 Coal-ashes, beneficial effect of, on land, 68.
Codiaeum (*Croton*) *appendiculatum*, 117; *C. Disraeli*, 117, 238; *C. Lord Cairns*, 117; *C. ovalifolium*, (woodcut) 7; *C. tortile*, 117; *C. variabile*, 117.
 Conifers, Ornamental, Fraser's Handy-book of, noticed, 262.
 Conservatories, Roof, 118.
 Cooling apparatus for liquids, 144.
Coprinus comatus, 261.
Correa Lawrenceana, 191.
Cotoneaster frigida, 64.
Crinum brachynema, 118.
 Crops, condition of the fruit, 215.
 Cucumber, disease of, (woodcut) 28.
 Cucumbers, smooth-skinned, 239.
 Culture, restrictive *v.* free, 193.
 Currants at Christmas, 186; budded on *Ribes palmatum*, 69.
 Cutler, E. R., testimonial to, 47.
Cyanophyllum marmoratum, 238.
Cydonia Maulei, (col. plate) 49.
Cypripedium japonicum, (woodcut) 220.
DATURA Knightii, 236; *D. suaveolens*, 236.
Daturas, shrubby, 236.
Dendrobium Devonianum, culture of, 78.
Desmodium penduliflorum, 23.
Deutzias, seedling double, 190.
Dieffenbachia brasiliensis, (woodcut) 273.
Dracæna amabilis, 62; *D. angustifolia*, 238; *D. Baptistii*, (woodcut) 53; *D. candida*, 118; *D. Hendersoni*, (woodcut) 53; *D. imperialis*, 62; *D. insignis*, 118; *D. regina*, 62.
Dracenas, hybrid, Bausé's, 285.
 Drying paper, Newman's botanical, 47.
 EARTH temperature, 120.
Echeveria Peacockii, (col. plate) 121.
 Edging-plants, 262.
 Endive, mode of blanching, 191.
Epiphyllum truncatum, display of, at Chatsworth, 70.

- Eranthemum pulchellum* for winter-blooming, 248.
Eucharis amazonica, 12, 67.
Eulalia japonica, 237.
Euphorbia fulgens, *alias* *jacquiniaeflora*, 89, 159. -
 Exhibitions: Alexandra Palace, International Potato, 262; Cologne International Horticultural, novelties at, 237; Edinburgh International Fruit and Flower, 261; Hereford and Perth Fungus, 261; Manchester Botanical and Horticultural Society's Whitsun, 143; May and June, 167; Jackman's Clematis, at Royal Botanic Society, 142; July Floral, 188; Midland Counties' Grand Horticultural, 189; National American Society's, 143; National Carnation and Picotee Society's, 215, 265; Nottingham and Midland Counties' Grand Rose, 189; Paul's (W.), Pot Rose, at Royal Botanic Society, 142; Royal National Tulip Society's, 190; Special, for 1875, 45.
- FERNS, Lowe's New British, awards to, 189; raising from spores, 143, 167.
 Ferns, Newman's History of British, noticed, 286; Smith's Classification of, noticed, 286.
Festucas as edging-plants, 262.
 Fig, Negro Largo, 19.
 Floricultural Notes, 104.
 Florists' Flowers, seasonable notes on, 38; percentage of improved novelties amongst, 118.
 Flowers for table decoration, 226.
 Flower-shows, annual, for the Benefit of Public Institutions in Birmingham, 46.
 French Bean, Canadian Wonder, 68.
 Fruits as a substitute for high-priced meat, 30; which shall we grow—sweet or acid? 163; Orchard-house, improvement in flavour of, 264; Mr. Rivers' new, 248; new, of 1874, 42.
 Fruits, Wall, culture of: Chap. i., Introductory, 25; Chap. ii., Soil, 50; Chap. iii., Roots, 121; Chap. iv., the Peach and Nectarine, 169; Chap. v., the Peach and Nectarine, 274.
 Fruit Crops, condition of the, 215.
 Fruit-culture v. Cremation, 55, 88.
 Fruit Manual, Hogg's, noticed, 125.
 Fruit-trees for North Walls, 64, 269.
 Fruit-trees in blossom, protection of, 166.
 Fruit-trees, transplanting, 198.
 Fruit-tree training, 17, 61.
Fuchsia corymbiflora, 80; *F. Riccartoni*, 68; *F. Sunray* (variegated), origin of, 287.
 Fuchsias, new, (woodcuts) 129.
 Fungus of the Potato-disease, (woodcuts) 171.
 Fungus Shows at Perth and at Hereford, 261.
- GARDEN, public, at Liverpool, 24.
 Garden, Royal, Summer and Winter, at Westminster, 47, 262.
 Garden, Winter, in the open air, 86.
 Garden Gossip, 22, 45, 68, 95, 117, 142, 167, 188, 215, 237, 261, 285.
 Garden Work: January, 9; February, 32; March, 56; April, 81; May, 105; June, 130; July, 153; August, 182; September, 205; October, 229; November, 249; December, 275.
 Gardens, economy of labour in, 63, 114.
 Gardeners' Year-Book and Almanac for 1875, noticed, 24.
 Gardenias, Ladd's grove of, 119.
 Gardening and the Royal Horticultural Society, 241, 279.
Genista virgata, (col. plate) 169.
Geonoma gracilis, 117; *G. Seemanni*, 23.
 Geranium and Pelargonium, supposed cross between, 23.
 Germination, hastening, by camphor, 215.
 Glass, toughened, 70.
 Glass-houses, new range of, in Glasgow Botanic Garden, 24.
 Glazing curvilinear roofs, Rendle's system of, 68.
 Gleichenia, notes on the, 219.
 Gooseberries, budded on *Ribes palmatum*, 68; at Christmas, 186.
 Gooseberry-grub, Toads and the, 178.
 Gooseberry-trees, wall of Warrington, at Thoresby, 287.
 Grapes, Edinburgh Champion, clusters of, (woodcuts) 244; Venn's Black Muscat, 22.
 Grapes, Hardy, ripening in 1874, 54; new, of 1874, 43; preserving after cutting, 145; scalding of, 270; unpopular by adverse treatment, 71.
 Gravel Walks, how to clean, with salt, 15.
 Gnano, Peruvian, 70.
- HAUTBOIS, forcing the, 209.
 Heath-soil, 263.
Helianthus globosus fistulosus, (woodcut) 69.
 Heliotrope, M. Sement, 239; *H. Surpasso Guascoi*, 239.
 Hellebores, new hybrid, (woodcut) 159.
Hibiscus syriacus, (woodcut) 21.
 Historia Filicum, Smith's, noticed, 286.
 Hogg's Fruit Manual, noticed, 125.
 Hollyhocks, Chater's new, 13.
 Horseradish, cultivation of, 191.
 Hyacinth, Etna, 117.
 Hyacinths, new, 105.
 Hyacinth-spikes, double or fasciated, 118, 144.
 Hybridising Plants, 22.
- IMATOPHYLLUM Aitoni, new variegated variety of, 238.
 JUNIPERUS chinensis aurea, 232.
- KITCHEN - GARDENING, High-class, Earley's, noticed, 192.
- LABELS, wooden, receipt for preserving, 120.
 Labour, economy of, in gardens, 63, 114.
 Laburnum as a forcing-plant, 190.
Lagerströmia indica, to flower, 146.
 Lantanas as bedding-plants, 123.
Lapageria rosea, hardiness of, 68.
 Leaves, absorbing power of, 24; used for garnishing, 69.

- Leeks, notes on, 92, 271.
 Libonia penrhosiensis, 168.
 Lilies, Garden: Chap. viii., *Lilium canadense* and its varieties, 157; Chap. ix., *Lilium Humboldtii*, and *L. pardalinum*, and their varieties, 217.
 Lilies, Japanese hybrid, 215.
Lilium, monograph of, Elwes's, 46.
Lilium auratum at Buckley Hall, 262; *L. auratum*, Mr. McIntosh's specimens of, 240; *L. avenaceum*, 190, 263; *L. callosum*, 190; *L. canadense*, (woodcut) 157; *L. c. rubro-flavum*, (col. plate) 157; *L. c. rubrum*, (col. plate) 157; *L. cordifolium*, 238; *L. Elizabethæ*, 215; *L. Hansonii*, 263; *L. Humboldtii*, (col. plate) 217; *L. japonicum* = *Kraueri*, 240; *L. medeoloides*, 189; *L. nepalense*, 189; *L. oxypetalum*, 189; *L. pardalinum*, (col. plate) 218; *L. p. californicum*, (col. plate) 218; *L. Parkmannii*, 215, 263; *L. Purity*, 287.
Liparis elegantissima, 238.
 Liquids, cooling apparatus for, 144.
Lithospermum prostratum, 171.
Loasa coronata, 136.
Lupinus arboreus as a sea-side shrub, 70.
 MARANTA *Massangeana*, 238.
Martinezia erosa, 117.
 Melon, Suttons' new pear-shaped, (woodcut) 44.
 Melons, new, of 1874, 43; soil for, 196.
 Mildew, destruction of, by sulphur, 24.
Minulus, fine strain of *maculosus* type, 96.
 Mistletoe parasitic on itself, 69.
Musa Champa, 43.
 Mushrooms, growing, in saw-dust, 270.
 NARCISSUS; its history and culture, Burbidge's, noticed, 140.
 Nectarine, Welbeck Seedling, (col. plate) 13.
 Nectarines, culture of, 169, 274; early, 177.
Nepenthes intermedia, (woodcut) 257.
 Newman's History of British Ferns, noticed, 286.
 Novelties, improved, amongst Florists' flowers, 118; at Cologne International Horticultural Exhibition, 237; at Royal Horticultural Society, 117.
 OAK, Lucombe, 69.
 Oaks, new Japanese evergreen, (woodcuts) 89, (woodcuts) 199.
 Obituary: Appleby, Thomas, 264; Ayres, William Port, 48; Bewley, Thomas, 120; Boreau, Alexander, 288; Bragg, W. R., 72; Brown, George, 24; Bruchmüller, Albert, 288; Buckley, Wilbraham, 48; Burnett, Thomas, 72; Courtois-Gérard, M., 48; Cullum, Lady, 72; Edward, George, 192; Fielder, Benjamin, 72; Gibson, John, 48; Ginger, W. S., 264; Gray, Dr. J. E., 120; Hanbury, Daniel, 120, Hextall, J. D., 120; Lancashire, Robert, 120; Leroy, André, 216; Nash, Daniel, 24; Plant, Dr. William, 288; Rollisson, William, 192; Rucker, Sigismund, 264; Schönefeld, W. de, 238; Standish, John, 216; Stelzner, Adolphe, 240; Tait, Alexander, 24; Taylor, Thomas, 216; Thuret, Gustave Adolphe, 192; Turnbull, Archibald, 48; Von Jacobi, General, 48; Weaver, Thomas, 72; Willison, William, 264.
 Onion, Queen, 168.
 Orchard-trees, trenching the ground for, 254.
 Orchids, cool, watering, 18.
 PANSIES, bedding, at Chiswick, 150.
 Paste for fixing labels on glass, wood, or paper, 23.
Pavonia Wiotii, 238.
 Pea, Beck's Gem or Tom Thumb, 7; Dr. Maclean, 287; Supplanter, (woodcut) 45.
 Peas, early, 6; new, 37.
 Peach, Condor, (col. plate) 133; Dr. Hogg, (col. plate) 185; Desse Tardive as a late, 18.
 Peaches, early, 177.
 Peach, culture of, 169, 274.
 Peach and Nectarine blossoms, premature dropping of, 74.
 Peach-borders, covering, 152.
 Peach-trees, standard, in the open ground, 258.
 Pear, Groom's Princess Royal, *alias* Matthews' Eliza, (woodcut) 77; Louise Bonne d'Avanches Panachée, (col. plate) 281; Lucy Grieve, (col. plate) 85; Souvenir du Congrès, (col. plate) 37.
 Pears, Chaumontel and other, at Floors, 244; influence of soils on, 162; late, 36, 79, 158; new, of 1874, 42; for July till May, 216; for the North of Scotland, 280.
 Peat-soil, 263.
 Pelargonium, Beauty of Oxton, 288; P. Crown Prince, (col. plate) 25; P. Constance, (col. plate) 25; P. pseudo-zonale, 68; P. Rienzi, (woodcut) 116; P. Buchner, (double) 238; P. Sylphide, (double) 238.
 Pelargonium, fancy, origin of the, 239.
 Pelargoniums, bedding, 238; M. Jean Sisley's new double, 263; select zonal and nosegay, 259, 284.
 Pelargonium and Geranium, supposed cross between, 23.
Pentagonia macrophylla, 238.
Pentstemon humilis, (col. plate) 241.
 Pentstemons, for mixed borders, 158.
Peronospora infestans, (woodcuts) 171.
 Phloxes, herbaceous, the best, 286.
Phormium tenax Colensoi, flowering of, 191.
 Phylloxera, plan for destroying, 47.
Picea magnifica, coning for the first time at Knapp Hill, 216.
 Picotees, notes on, 40, 222.
 Pinetum, Gordon's, 2nd edition, noticed, 134.
 Plants, edging, 262; sickly pot, cure for, 239.
Platanus orientalis Rosenthalii, 71.
Pleroma macranthum and its allies, 3.
 Plum, Prince Englebert, 240; Prince of Wales, (col. plate) 253; Sultan, (col. plate) 145.
 Plums for a north wall, 64, 269.
 Polyanthuses, 281; gold-laced and other, 93.

- Polygonatum multiflorum*, 144.
 Pommier de Paradis, (col. plate) 97.
 Portulacas, how to grow, 141.
 Potatos in Algeria, injured by larvæ, 47.
 Potato-disease, fungus of the, (woodcuts) 171.
Pothos Endresii, 237.
 Pot-plants, sickly, cure for, 239.
 Primroses, new, 115.
Primula japonica, raising of, from seed, 168;
P. pulcherrima, 118.
 Prize, Empress', award of, to Messrs. Jas.
 Veitch and Sons, 239.
 Protectors, Paper, for early crops, 71.
 Pruning, close, effect of, 71.
Prunus tomentosa, 144.
 Pyramid Trees, new stylo of planting, 262.
Pyrus Maulei, (col. plate) 49.
QUERCUS acuta albo-nervis, (woodcut) 91; *Q.*
angustifolia, (woodcut) 92; *Q. bambusifolia*,
 (woodcut) 200; *Q. Burgerii*, (woodcut) 202;
Q. Cerris subperennis, 69; *Q. cuspidata*,
 varieties of, (woodcuts) 92; *Q. gilva*,
 (woodcut) 91; *Q. glauca*, varieties of,
 (woodcut) 89, 90, 91; *Q. salicifolia*, (wood-
 cut) 199; *Q. sclerophylla*, (woodcut) 202;
Q. setifera, (woodcuts) 199.
RANUNCULUS Ficaria calthifolius, 68.
 Raspberry, Northumberland Fillbasket, 240.
 Reference Catalogue, Country Gentleman's, to
 the best modern books, 144.
Renanthera coccinea, at Chatsworth, 71.
Retinosporas, Golden, 258.
Rhododendron (standard), Scipio, 190.
 Rose (H. P.) St. George, (col. plate) 1; R.
 (H. P.) Duchess of Edinburgh, 96; R.
 (tea) Catherine Mermet, (col. plate) 73; R.
 Macartney, for walls, &c., 66.
 Roses, now, of 1873 and 1874, 104; new, of
 1874 and 1875, 227; Laxton's new English
 seedling, 264; new Tea-scented, 73; Pot,
 Wm. Paul's Exhibition of, at Regent's Park,
 142.
 Roso-buds, button-hole, foliage for, 119.
 Rose-hedges, 247.
Rottlera barbata, 237.
SARRACENIA purpurea, outdoors, at Glasnevin,
 68; *S. Stevensii*, 118.
Saxifraga ciliata, 95; *S. umbrosa*, a good
 shade-plant, 239.
Schizostylis coccinea, 27.
 Scion, influence of, on stock, 73.
Scutellaria Mociniana, 210.
Selaginella textura, 238.
Senecio, double purple, 190.
 Shade of trees, *Saxifraga umbrosa* for planting
 under, 239.
 Societies: Manchester Botanical and Horti-
 cultural Whitsun Exhibition, 143; National
 Auricula, annual exhibition, 143; National
 Carnation and Picotee, annual exhibition,
 215; criticism of exhibition of, 265; *Pelar-
 gonium*, annual meeting of, 215; issue of
 schedule for 1876, 285; show of, 189; Royal
 Caledonian Horticultural, International
 Fruit and Flower Show at Edinburgh, 261;
 Royal National Tulip, annual exhibition,
 190; Royal Horticultural, July exhibition,
 188; meetings of, 95; novelties produced
 at, 117.
 Society, Royal Horticultural, and Gardening,
 241, 279.
 Soil, Heath, or Peat, 263; influence of, on
 Pears, 162; for Melons, 196.
Solanum humile, 28.
Spathiphyllum Wallisii, 118.
Spiræa palmata, 144, 168.
Spiræas, hybrid, 190.
 Spring-bedding, annuals for, 196.
 Stevias, cultural notes on, 233.
 Stocks, doubleness of flowers in, 238.
 Storm of December, 1874, effects of, 43.
 Strawberry, Hautbois, forcing the, 209.
 Sulphur for destruction of mildew, 24.
 Sweet William, auricula-oyed, (woodcut) 40.
 TABLE Decoration, flowers for, 226.
Tacsonia (hybrid) *Andersoni*, 287.
Tillandsia musaica, (woodcut) 15.
 Toads and the Gooseberry-grub, 178.
 Tomato, culture of the, 4; early, 220.
 Transplantation, effect of, in averting damage
 by frost, 69.
 Tulips, gossip about, 202; seasonable notes
 on, 40.
VERBENAS adapted for bedding, 238.
 Vine without roots, tenacity of life in, 134.
 Vines, the Lambton Castle, 100.
 Vines and Vine-culture: Chap. vii., Dis-
 budding and stopping the shoots, (woodcuts)
 110; Chap. viii., Thinning the Fruit,
 (woodcuts) 147.
 Vine-culture, peculiarities of, 19, 65.
 Vine-shoots, tying down, 128.
 Vino Sport, 4, 47.
 Vinoyard, Garston, sale of, 119.
 Violets, tree, 197.
Vriesia musaica, (woodcut) 15; *V. regina*, 71;
V. splendens, 30.
WELLINGTONIA gigantea aurea, 118; *W.*
gigantea pendula, 69.
Wistaria sinensis, 86.
 Yews, Irish, at Ingestrie Hall, 47.
Yucca filamentosa angustifolia variegata, 237.

